Industrial Equipment News

IEN

FOUNDED 1933

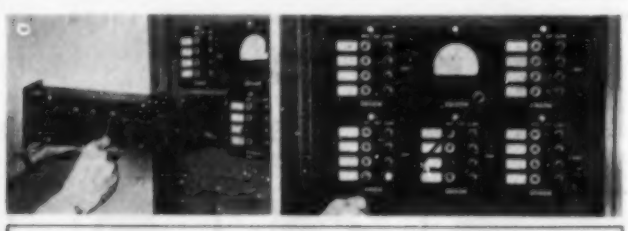
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

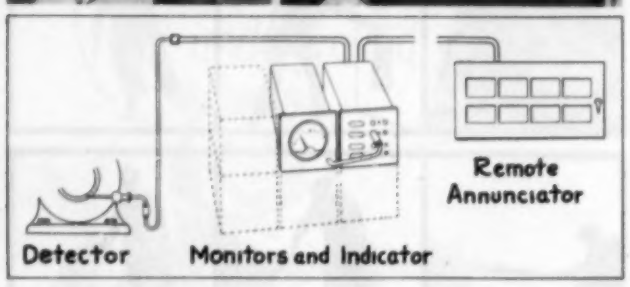
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN-13151**

Signaling - Temperature indicator, four point monitors and detectors

Source: THOMAS A. EDISON INC.
51 Lakeside Ave., Dept. IEN, West Orange, N. J.





Temperatures can be set in field

One indicator unit, to read temperature, with a reel mounted jack cord and any number of four point temperature monitor units, with each point connecting electrically to a resistance type temperature detector, make up new Omniguard equipment to indicate and read predetermined critical temperatures. Each of the four points on one monitor mounts a signal lamp that lights when the critical temperature is reached. An operator can pull out the jack cord and plug it into a socket beside the lamp to check the actual temperature on the indicator.

Both the indicator and monitor plug into a panel assembly so no field wiring is required other than to connect into the indicators. These can be positioned at any critical points on bearings, lubricant lines, process lines, air ducts, tanks, processing equipment. Critical temperature can be set in an overall range between minus 100 and plus 1,350 deg. F. Four detectors list at about $69. The four point monitor is $240 and the indicator is $78. A remote annunciator can be added.

If you write maker identify as **IEN-13152**

Soldering - Ultrasonic equipment for production soldering without flux

Source: AEROPROJECTS INCORPORATED
310 E. Rosedale Ave., Dept. IEN, West Chester, Pa.

Model S-3-H-54-11

Aluminum, brass, copper, silver, magnesium can all be soldered without need for flux by application of this new Model Sonobond ultrasonic equipment. It takes soldering tips from $\frac{3}{16}$ to $\frac{1}{16}$ in. in diameter. It employs a 50-watt tip heater for small work. A 600-watt heating platen can be added if the work piece is large. The new unit is primarily intended for "pilot" operation in determining need for the larger production equipment, previously described IEN-6158-54.

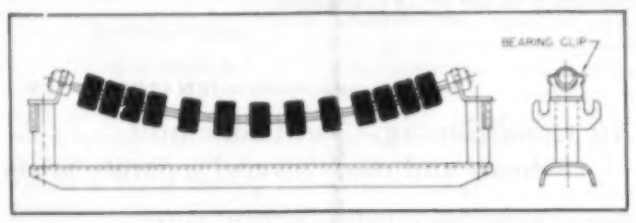
Work parts, to be soldered, are placed on the work platen and solder is melted on the surfaces that require tinning. When the solder has melted, ultrasonic energy is applied by moving the soldering head over the surface, keeping the heated tip in the head in contact with the solder. Interval of exposure to the high frequency is 5 to 10 seconds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as **IEN-13153**

Conveying - Troughing belt idler, neoprene discs molded on wire rope

Source: JOY MFG. COMPANY
Henry W. Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.



Bulletin LD-103

A wire rope is suspended between ball bearings in the frame of this new Limberoller belt idler. The rope is sheathed in neoprene and carries neoprene discs molded in place. The idler assembly is available for belt widths measuring 24, 30 and 36 inches. The discs present resilient flat support surfaces beneath the belt and all revolve with the belt. The resulting flexing action makes the idler self-cleaning.

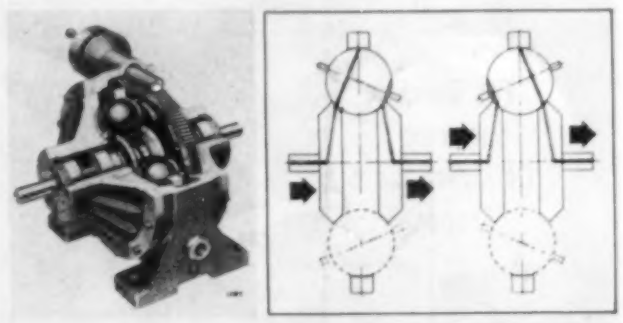
The bearings are supported above and to each side of the belt out of the dirt zone. They are locked in place with spring clips. Individual units can be changed without interrupting material flow. The bearings are grease lubricated and permanently sealed with neoprene to keep grease in and dirt out.

The structural stands are made of welded pipe in Standard CM design, measuring 13¼ or 15¾ in. in height with the tripod base, Low CL design measuring 10⅜ in. in height with a stainless steel clad inverted "U" skid base, and Type H with brackets to mount on conventional sections. All of the stands are fitted with mounting slots to hold the rollers. A conveyor installation is made by setting up the stands in line and adding stiffening rails between them.

If you write maker identify as **IEN-13154**

Drive - Variable transmission provides 9 to 1 stepless speed range

Source: CLEVELAND WORM & GEAR CO.
3249 E. 80th St., Dept. IEN, Cleveland 4, Ohio



Illustrated data in Bulletin K-100

Power is transmitted from the input shaft to the output shaft of this new Speed Variator through alloy steel driving balls that ride inside a pressure ring in contact with discs attached to the two shafts. Relative speed of the output shaft is adjusted through a 9 to 1 range, from ⅓ to 3 times the input speed, by changing the angular position of the axles on which the balls rotate. The unit is available in nine sizes rating ½ to 10 hp. at 1,750 input rpm. Operation is inherently smooth and quiet.

The coaxial input and output shafts rotate in the same direction, either clockwise or counter-clockwise. Speed is regulated by manual adjustment with an indicator or by manual or power operated remote control devices. The design provides ample bearing support for both shafts to carry over-hung pulleys. Base dimensions range from 8¼ to 17½ in. by 6¼ to 12½ inches. Overall length, in line with the shafts, is 12 to 23¾ in. for the new transmission.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

DECEMBER, 1954
VOL. 22 No. 12

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* _____
- ☐ *Production, Mr.* _____
- ☐ *Engineering, Mr.* _____
- ☐ *Product Design, Mr.* _____
- ☐ *Purchasing, Mr.* _____
- ☐ _____

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 71
Adhesives 21*, 38, 62*
Air Conditioning 2*, 70*
Alloys 22*, 33, 70*, 73
Aluminum 19, 28*, 41, 70*

BALANCING 45*
Band Saw Guides 13
Barriers, Parking Lot 100
Batteries 22*
Battery Charging 54*
Bearings 2, 22, 41, 70*, 79, 81, 96

BELLOWS, Metal 82
Rubber 58
BELTS
Conveyor 23*, 46, 99
Dressings 60
Fastenings 79
Transmission 50
BENCHES 63*
Tops 8
Bending 24, 33*, 66, 94, 95, 97
Bins 9, 19
Blowers & Fans 10, 24, 47, 65, 86, 99*, 104
Boards, Bulletin 76
Boilers 26, 52, 75
Bolts 5, 16*, 22, 53, 69, 92

BOOTHS, Spray 20*, 55, 91
Telephone 62
Boring 47, 90
Boxes 30, 53
Brakes 81*
Brazing 2, 40*, 44*, 65
Bronze 39, 73
Buckets, Clamshell 73
Buildings 6, 54, 59*, 65, 70*, 82, 93, 95*, 100*
Burring 10, 92
Bushings, Drill 48, 69

CABINETS 4, 40
Cable, Electric 3, 8, 15, 19*, 83, 93
Calculating 45, 69*
Capacitors 28, 38*
Car Door Operators 19
Cars 53, 87
Casters 47, 49, 51*, 53, 56, 71, 98
Castings 22*, 46
Centering 8
CHAIN
Conveyor 18
Repair 20
Transmission 18
Chairs 48
Chemicals 22*
Chucks 51, 70*, 78, 93
Circuit Breakers 80
Circuits, Electric 3*
Clamps 21, 26, 63, 70*, 71*, 89, 90, 98*

CLEANING
Blast 58, 65
Blower 10, 47, 65
Drain 99
Floor 22, 68, 83*
Materials 10*, 26, 34, 39*, 80, 92, 96
Rotary 38
Spray 30*, 66
Tube 52
Vacuum 10, 21, 36, 47, 49, 65, 69*, 89*
Vapor 82
Washing 55, 66*, 90
Clutches 7*, 44*, 45, 47*, 54, 79*
Collars, Shaft 101
Collectors, Fume 9
Communicating 43, 62
Comparators 8, 41*, 53*, 104
Compressors 9, 18*, 20, 34, 61
CONDUCTORS, Electric 3, 8, 13, 15, 19*, 73*, 83, 93
Heat 62*
CONDUIT 39*
Fittings 14*, 39*, 102
Connectors, Electric 16, 33, 34, 40*, 74
Construction 40
Contactors 11, 71*
Containers 23, 64*, 66
CONTROLS
Engine 77*
Flame 83*
Liquid Level 36
Machine Tool 67
Material Level 81*
Motors 9*, 29
Odor 11*
pH 67*
Positioning 57*, 70, 95
Pressure 10*, 39, 57, 66, 81*, 103
Process 43*, 77, 91*, 101*
Production 18
Temperature 8, 21, 41, 61, 73*, 79, 81*, 81, 84, 89, 99*, 101*, 104
Voltage 5, 16
CONVEYING
Belt 1*, 6, 23*, 32, 46, 62*, 63, 64, 81, 85, 99, 102
Chain 18
Overhead 6, 14, 47
Pneumatic 72, 75*
Roller 7, 71*
Screw 71*, 85
Vibrating 33
Cooling 3, 21, 62
Corrosion Proofing 25, 32, 38, 43, 44, 58, 60*, 101
Counting 17*, 30, 33*, 37, 79*, 97
Couplings, Shaft 17, 34, 52
Covers, Dock 10, 36
Cranes 24, 31, 46, 47, 87

CUTTING
Abrasive 15*, 23*, 88*
Flame 9*, 35, 78
Machines 12, 37, 61*, 72
Tools 19*, 25*, 48, 76, 96*
Cylinders, Power 9, 23*, 24, 26, 82, 85, 90, 94, 101

DEGREASING 82, 92
Demagnetizing 10
Detectors, Metal 11
Die Castings 23*, 52
Disintegrating 68
Dispensing 21, 22, 24, 49, 53
Dockboards 72
DOORS 14, 71*
Hardware 65
Drafting 3, 87*
DRILLING
Bushings 48, 69
Heads 15*, 31, 79*, 86
Jigs 14
Machines 11, 33
Stands 26, 35*
Tools 61, 90*
DRIVES
Adjustable Speed 13
Components 3, 5, 7*, 7, 9, 17, 18, 32, 34, 36, 44*, 45, 47*, 50, 52, 54, 63, 71*, 74, 79*, 81*
Speed Reducer 6, 13, 28, 71, 80*, 84, 96*
Variable Speed 1*, 9, 20, 27, 55, 71*
Drying 3, 30*, 39, 45, 64, 73, 86, 98
DUCT, Electric 65*, 73*, 77
Ventilating 70, 100
Dust Collecting 7, 26, 46, 55, 72, 77, 78, 79*, 94

ELECTRONIC PRODUCTS 38
Elevators 25, 31, 53*, 87*, 89, 94*, 98*
Engineering 71*
Engines 39*
Engraving 69
Expanding 79
Extinguishing 2, 85
Extracting 68

FABRICATING 23*, 27*, 96*
Fabrics 67
Fans & Blowers 10, 24, 47, 65, 86, 99*, 104
Fastening Tools 8
Fastenings 5, 9, 10*, 12, 16*, 22, 33, 37, 38, 42, 46, 49, 52, 53, 58*, 64*, 64, 69, 72*, 73, 75, 78, 92, 97, 99, 101
Faucet Repair Parts 70
Feeding 22, 26, 31, 60, 62, 97*
Fence 31
Filing 58, 76

Reader Service Form....16, 88
Useful Information....22
New Literature....70
Ideas For You....52
Index to Advertisers....102
"I Wish I Had"....104

FILTERING
Air 4, 39, 45, 77, 78, 98
Gas 87*, 100*
Liquid 72*, 81, 89, 100
First Aid 31*
Flexible Shaft Equipment 10, 88*
Floats 42
Flock 8
Floors 34, 41, 51, 72*, 72, 86, 101, 102, 103, 104
FORMING 40*
Foundry Equipment 48*
Furnaces 11, 32, 57, 86
Furniture 8, 48, 63*, 100
Fuses 20

GAGES
Angle 16*
Dimensional 3*, 8, 12*, 21*, 23, 24*, 28, 29, 38, 41*, 52*, 53*, 63*, 72*, 79, 88, 104
Liquid Level 25*, 42*
Pressure 32, 46*, 53*
Smoke Density 61*
Galvanizing 104
Gaskets 94
Gear Cutting 29
Gears 36, 74
GENERATORS
Electric 61, 72*, 90*
Steam 26, 52, 75
Glass 72*, 101
Gloves 57, 87*
Goggles 82
Grabs 6*, 30, 63
Grating, Floor 34, 41, 72*
GRINDING
Fixtures 52*
Machines 10, 16, 67, 72*, 80, 88*, 95
Stones 10, 92
Tools 12*, 25, 74*
Wheel Dressers 33, 74*
Wheels 36, 50, 67, 71, 74*
Grommets 74*
Guides, Purchasing 103

HAMMERS 42
Handles 74*
Handling 5, 6*, 9, 19, 22, 25, 30, 40, 41*, 48, 53, 63, 66, 72, 73, 74*, 97*, 97

(continued over)

To request specific details on items of interest, use Specific Information Section of IEN's Reader Service Form at Pages 16 and 88

Hard Facing 48*
Hardboard 98
Heads, Drill 15*, 86
Heat Treating 11, 54*, 57, 86
HEATING
Elements 5*, 5, 7*, 11, 15, 21, 54, 60*, 89, 99
Flame 59
High Frequency 62, 92*
Process 49*, 55
Space 24*, 47, 54, 56, 75*, 80
HOISTS 9, 66, 69, 91, 97*
Drives 74
Hoppers 40, 53
HOSE 53, 70, 100
Fittings 12*, 16, 44, 60*, 98*
Metal 74, 80

INDEXING 10, 33, 59, 70
Indicators, Temperature 58
Ink 17
Inserts, Thread 38*
INSULATING
Electric 29, 36, 67, 99, 102
Shock 74*
Sound 97
Thermal 38, 84
Vibration 12, 56*, 76*
Interlocks 35, 88

JACKS 2, 7, 35, 39, 76*, 82, 92*
JOINTS, Pipe 8, 35
Shaft 5

KEYSEATING 55*, 82

LABELS 24
Ladders 21, 60, 76*
Laminates 12, 45, 77*, 85
Lamps 42
Lapping 51, 69
Latches 42, 58*, 73
LATHES 18*, 29*, 37, 74, 89*, 90
Attachments 93
Tools 25*, 76, 90
Layout 48, 54*, 65*, 76*
Lighting 19, 24*, 36*, 42, 48*, 75*
Loading 40
Locknuts 33, 46
Locks 76*
LUBRICATING EQUIPMENT 19*, 25, 39, 43, 56*, 60, 76*
Materials 3, 20*, 30, 95, 96

MACHINE WAYS 17
Machining 24*, 54, 76*
Magnets 5, 9, 14*, 21*, 32*, 54, 89, 104
Magnifying 24
Management 26*, 52
MARKING
Machines 7, 68, 69, 85*, 86, 98*
Materials 17, 24, 47*
Tools 5, 32
Masking 54*, 65
Matrix Materials 33
Melting 21, 32, 53
METAL
Data 3
Design Strengthened 7
Expanded 51
Parts 19, 37, 50, 52, 64, 91
Perforated 62, 76*
Thermostatic 53
Metal Treating 58
METERS
Air Velocity 68
Electric 49
Flow 104
Liquid 77, 92*, 98*
Microscopes 104
Milling 7, 19*, 29, 50
Monorail 6
MOTORS, Electric 2*, 44*, 62, 70, 84, 88*, 93*, 96*
Pneumatic 20, 73

NAMEPLATES 100*
New Products 50*
Nozzles 23
Numbering 95*
Nuts 53, 92

OSCILLOSCOPES 54
Ovens 30*, 55, 64

PACKAGING
Containers 54
Equipment 70
Materials 37, 43, 48*, 58*
Packings 26*, 98
PAINTING Equipment 20*, 42, 53*, 55, 58*, 91
Materials 10, 41, 66*
Pencils 3
Photography 4, 18*, 83
Pickling 86*
Pins 75
PIPE 12, 76*
Coils 21
Fittings 8, 32, 34, 35, 43, 55, 78*, 101
Fittings, Jacketed 87
Jacketed 87
Plastic 43*
PLASTICS
Materials 8*, 26*, 45, 63, 75*, 77*, 78*
Products 43*, 54, 58*, 60*, 69, 72, 78*, 79, 82, 95*, 99, 100*
PLATES, Floor 51, 86
Surface 54*, 65*
Plating 25
Pliers 10
PLYWOOD 12
Metal Faced 85
Polishing 16, 57*, 91, 95
Powder Metal Parts 22
PRESSES
Attachments 22, 60, 62
Hydraulic 73*
Mechanical 16, 37*, 78*, 83, 88
Pneumatic 26
Tools 39, 78*, 85*
PRINTING Equipment 43, 44, 55
Materials 4
Processing 12
Projecting 83
Protecting 3, 10, 14, 17, 27, 36, 57, 82, 83*, 87*, 97
Protectors, Thread 69
Pulleys 32, 63
Pulling 35
Pulverizing 72, 73
PUMPS
Centrifugal 17*, 17, 18, 48, 51*, 55, 75, 78*, 80*, 83*
Hand 49
Hydraulic 13*, 59, 80*, 95, 97
Magnetic 32*
Metering 31, 53
Pneumatic 60, 76
Rotary 18, 48, 78*, 102
Turbine 29*, 36*
Vacuum 11, 20, 32*
Punching 66
PYROMETERS 18, 30*, 79, 90
Supplies 23

RACKS 13, 34, 49*, 85*, 95*
Reaming 97*
Record Keeping 18
Recorders, Production 46
Rectifying 14*, 61, 77*, 85*, 85, 86*, 99
Reducers, Speed 6, 13, 28, 71, 80*
Reels 22
Refractories 35, 40, 87
Refrigerating 80*, 86*
REGISTER, MANUFACTURERS' 50*
Relays 11, 38, 44, 47, 50, 84, 101
Reels 60, 62, 63*
Resistors 11, 23, 88*
Respirators 14, 17, 27
Rheostats 23, 71
RINGS, Piston 64
Retaining 49
Riveting 12, 46
Rivets 12, 53, 64
Rock Drilling 44
Rolls, Machine 7
Roofs 100*
Rope 26*
Rubber Products 15, 27, 58, 80*, 86*

SANDING 100
Sapphire, Synthetic 19, 36*
SAWING
Blades 3*, 45
Machines 28, 45, 57, 80*
Tools 68*, 76, 78
Scaffolds 14, 34, 52, 88, 96*
Scales 30, 33*
Screening 94
Screw Driving 82*, 99*
Screw Machines 29*, 74
Screws 5, 9, 10*, 22, 37, 53, 64*, 69, 78, 92, 97
SEALING Components 58, 59, 69, 82*, 98
Materials 15, 94
Separating 3, 4, 5, 30, 40, 72, 73, 94, 98
Sewing 70
Shearing 10, 17, 24, 47*, 72, 91, 92
Sheaves 3
Shelving 63, 71, 72
Shim Stock 40
Shovels, Power 40
Shredding 57
SIGNALING 1*, 11, 31, 82*
Signs 13
Skids 9, 48, 53
Slitting 10, 92
Snow Plows 66*
SOLDERING
Equipment 1*, 35*, 49*, 64
Materials 45, 94*
Solenoids 5, 34, 50, 51
Spraying 23
Springs 68, 75
Sprockets 7, 18, 82*
Stapling 5*, 20, 45*, 55
STEELS 6*, 6, 19, 41, 72, 77, 82*, 103
Storing 4, 13, 25, 34, 40, 49*, 63, 71, 72, 85*, 95*
Straightening 22
Strainers 59
Strapping 18, 57, 63*, 82*, 91, 102
Striping 98*
STRIPPING 37, 61*, 98
Stud Driving 8, 93
Surplus 4
Switches 12, 28, 29, 55*, 66, 90

TABLES 100
Machine 10, 59
Tachometers 59, 82*
Tackers 55
Tanks 4, 23, 66, 68
Tapes 36, 60*, 65, 67, 102
TAPPING Heads 79
Tools 28
Telescopes, Industrial 44
TESTING
Chemical 31*
Electric 15, 20*, 49, 81*, 96
Electronic 54
Fatigue 94*
Gas 68*, 78
Hardness 13*, 44, 56, 64*, 99*
Performance 82*
Petroleum 28*
Surface Roughness 23
Tension 82*, 94
Torque 25
Vibration 86*
Thermocouples 23
Thermometers 30, 32, 40*
THREADING
Heads 79
Machines 34*, 56
Tools 28, 84*
Timing 16, 30, 38, 44, 67
Tires 27, 29, 76
Torches 6, 59
Track 12
Tractors 23, 84*, 97*, 100*
Trailers 16, 38*, 53
Tramrail 47
TRANSDUCERS 40, 91*
Transfers, Decal 47*
Transformers 15, 24, 50, 77*, 81
Traps 4, 11, 26, 35, 93*
Trays 72
Trolleys, Conveyor 14, 74
TRUCKS
Attachments 27*, 40, 42*
Hand 16, 38*, 48
Hand Lift 43, 89, 92
Power 95*
Power Lift 6*, 11*, 13, 28*, 34*, 37*, 64, 65*, 78, 91*, 94*, 98*
Power Units 61
Tractor 23, 84*, 97*, 100*
Trailer 16, 38*, 53
TUBES 53, 75, 95
Finned 89
Flexible 74, 80
Tumbling 61

UNIONS, PIPE 32, 55, 101

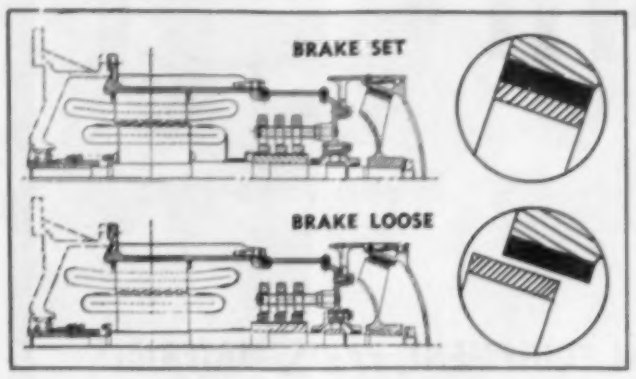
VALVES
Blow 16*, 89, 93
Jacketed 87
Line 4, 28, 50, 56, 58, 68*, 70, 84*, 100
Operating 6, 27, 48, 57*, 71, 83, 84*, 84, 103
Power Operated 34*, 84, 90
Regulating 10*, 36, 39, 57, 61, 73*, 81, 89, 93, 103 104
Relief 32
Repair Parts 70
Ventilating 9, 24, 46*, 56*, 70, 84*, 86, 99*, 100
Vibrating 80
Vibration Isolators 12, 56*
Vises 19, 20, 26, 59*, 60, 84*, 87

WADDING 37
Washrooms 26, 80
Watchclocks 30
Water Proofing 38
Water Treating 20, 28*, 44, 96
Weighing 30, 33*
WELDING
Arc 6, 36*, 67*, 74, 76, 92
Curtains 3
Materials 13*, 27*, 31*, 35*, 42, 48*, 66, 84*
Positioners 16*
Pressure 84*
Resistance 44*, 74
Service 50
Wheels 14, 17, 29, 47, 56
Winding 12, 37, 68, 92
WIRE, Magnet 13
Steel 42
Wire Cloth Parts 59
WIRE ROPE
Fittings 63
Slings 25, 97
Wood Working 47, 57, 68*
Wrenches 25, 39, 46*, 83

If you write maker identify as **IEN - 13155**

Motor - Totally enclosed ac. applies brake when circuit is open

Source: HARNISCHFEGER CORPORATION
4607 W. National Ave., Dept. IEN, Milwaukee 46, Wis.



Meets NEMA Standards

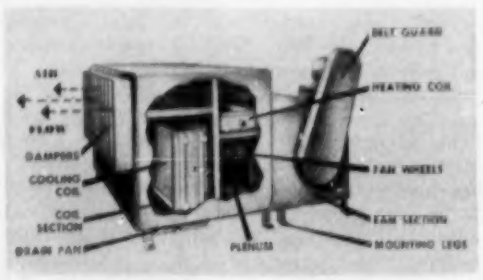
The rotor of this new motor is moved axially through a short distance by a spring to apply a brake mounted at one end when the motor circuit is opened. Magnetic pull, to bring the rotor back into magnetic center, acts against the spring and releases the brake when the circuit is closed. The brake wheel, keyed to the rotor shaft, carries integral fan blades to drive cooling air over the enclosed housing. The motor is in production in the United States under license by the company in a range of sizes from ¾ to 30 hp. in both squirrel and slip ring designs.

The upper half section view illustrates the rotor in "brake-set" position. The lower section shows it in running position with the brake disengaged.

If you write maker identify as **IEN - 13156**

Air Conditioning - Multi-zone unit heats and cools several separate areas

Source: WESTINGHOUSE ELECTRIC CORP.
200 Readville St., Dept. IEN, Boston 30, Mass.



Ask for Multi-Zone air conditioning bulletin

The motor driven fan, that forms a part of this new air conditioning unit, forces air over heating or cooling coils, or a combination of the two. It delivers it to a damper equipped section from where the air can be channeled to a maximum of 12 separate zones. Required air quantities and temperatures are controlled by positioning sets of interconnected hot and cold air dampers in the coil section discharge. The fan assembly is made up of two reverse inclined blade fans that will not overload. Seven sizes rate 1,665 to 21,000 cu. ft. per minute.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13157**

. . . the remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump (note fig. 1 above) is a natural because the ram, only 4½ inches high (note fig. 2) fits in places where a jack handle cannot be used. Connected by 8 feet of strong rubber hose, it can safely and quickly move 30 tons, 2 inches in any direction.

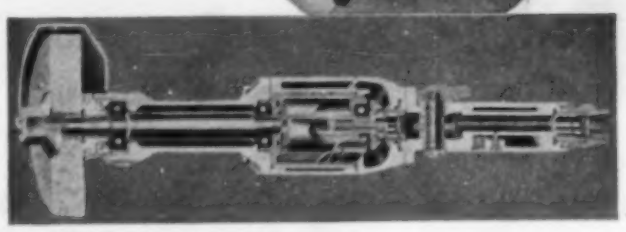
Ask your local distributor for the versatile "Lo-Hite" (No. 30-H-4.5) or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD32-M and name of nearest distributor, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 13158**

With New Departures— ROTOR GIVES UPKEEP THE "AIR"!



Holding the line against downtime! Three New Departures in the Rotor Tool air grinder need no adjustment . . . cut lubrication requirements to virtually zero. These New Departures are double-shielded from foreign matter . . . have high radial and thrust capacity . . . withstand shocks of hard use. And cool-running New Departure **ball** bearings maintain alignment, assure maximum power.

Build advantages into your product. Talk with your New Departure engineer — *today!*

NEW DEPARTURE
BALL BEARINGS

If you write maker identify as **IEN - 13159**

FIRE!

Put it out in seconds with a Kidde portable extinguisher!

You *have* to put fire out *fast!* So it's vital to have Kidde extinguishers near *every* fire hazard. Kidde portables, with their fast-acting trigger release, can swing into action *instantly.*

Just grab a Kidde CO_2 or Dry Chemical portable, aim it, pull the trigger, and fire's out!

Don't forget *big* hazards like spray booths, dip tanks, electrical equipment, flammable liquids. Protect *them* with a built-in Kidde *Fully Automatic* CO_2 Fire Extinguishing *System.*

Kidde

Walter Kidde & Co., Inc.
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Belleville 9, N. J.

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A prize recipe for brazing spuds

Principal ingredient is the low-temperature silver brazing alloy EASY-FLO. You simply place the spud in position with a ring of EASY-FLO wire around it, apply flux and heat.

Logan Machine & Metal Stamping Co., Akron, Ohio, get excellent results with this recipe in brazing spuds in the oil pans of an automatic automobile drive.

Photos show how they do it.

Pans with spuds and EASY-FLO rings are placed in fixtures of 2-station induction heating unit. Brazing two at a time, production is 400 an hour. Under a 100-lb. torque test "the pan pulls apart first."

GET THIS BRAZING RECIPE BOOK

BULLETIN 20 gives tried and proved recipes for fast, low-cost metal joining. Write for a copy today.

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ADAMS creates a Cyclone to give you Drier Compressed Air

The Adams Aftercooler and Cyclone Separator are a perfect team. The highly efficient aftercooler condenses more moisture . . . the separator's unique design creates a cyclone to remove more of the condensation.

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R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

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DURALL-T* TYPE UF
is fully approved for underground feeder

Yes, it can be buried *directly* in the ground. Tough thermoplastic insulation and jacket resist moisture, soil acids, and crushing. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.* *Reg. U. S. Pat. Off. 54441

the right cable for the job

ANACONDA® WIRE AND CABLE

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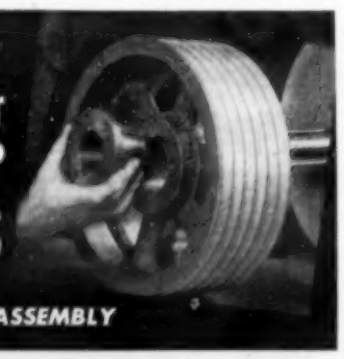
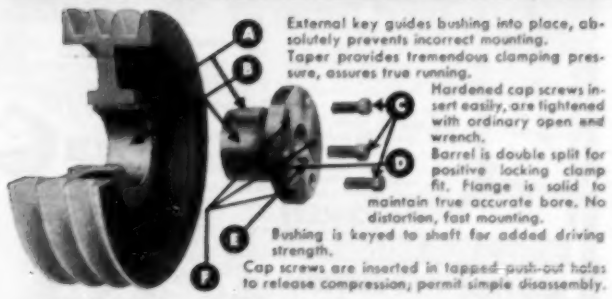
Browning Bushings



FOR SIMPLIFIED ASSEMBLY



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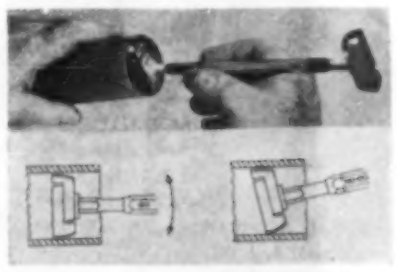
Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 13164

Gage - Adjustable "go" and "no-go", fifteen sizes, 0.995 to 6.005 inches

Source: M. C. HUTTO COMPANY
6516 Detroit Ave., Dept. IEN, Cleveland 2, Ohio



Centers itself

The "go" end rocks freely without forcing and the "no-go" end binds in a bore after this new Boregage has been set up at the two ends of its pencil-type handle. Setting can be made with micrometers, comparators, precision gage blocks or to a master ring. Both the adjusting screw and the lock screw at each end can be sealed after the adjustment is made.

The gage enters freely into a bore. It detects bellmouth, taper, out of round, and has a true micrometer "feel" when it is rocked in a hole. Short sections, at the end of the handle, are colored green and red to indicate "go" and "no-go". Notches are cut in the "no-go" end for identification by feel.

If you write maker identify as IEN - 13165

Electric Circuits - Copper foil with thermosetting dry film adhesive

Source: PERMACEL TAPE CORP.
Highway One, Dept. IEN, New Brunswick, N. J.

Technical data upon request

Electrolytic copper foil, rated 1 oz. in weight, is coated with a thermosetting adhesive in dry film form for lamination to backing materials such as steel, brass, bronze, aluminum, wood, plastics, in this new tape. It is intended for use in printed circuits and is applied by heat and pressure, the former at 325 to 350 deg. F. and the latter at 100 to 2,000 lb. per square inch. The adhesive sets in 10 to 20 min. and is resistant to 410 deg. F. for 10 sec. after curing. This permits soldering connections to be made in assembling a circuit.

If you write maker identify as IEN - 13166

Sawing - Hand hacksaw blade hard high speed teeth on tough body

Source: CAPEWELL MFG. COMPANY
60 Governor St., Dept. IEN, Hartford 2, Conn.

Features resistance to shattering

Truflex is a new blade for use in hand hack saw frames. The blade is made of high speed steel with hardened teeth and with the body heat treated for toughness to permit flexing without breaking. Ten inch blades are available with 10, 24 or 32 teeth per inch. Twelve inch blades can be specified at 14, 18, 24 or 32 teeth per inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13167

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IPCO WELDING CURTAINS

A SOUND INVESTMENT FOR PROTECTION OF PERSONNEL

Workers and passers-by are protected from harmful rays given off by welding operations. Also serve as a protective shield against flying chips and scale. Made of special flameproof and waterproof canvas —or asbestos—complete with eyelets for suspending on rod or pipe support.

WRITE FOR BULLETIN NO. 43

IPCO *Safety Equipment for all Industries*
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Republic Aviation Corp. further states, *"It was also found that, during test, LUBRIPLATE increased efficiency of machines twenty per cent by reducing friction loss. Republic has been using LUBRIPLATE Lubricants successfully for the past eight years."*

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Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

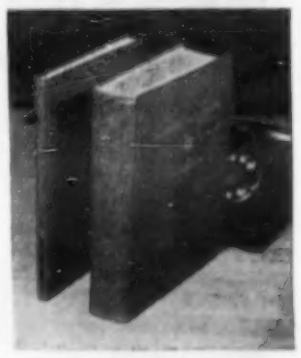
Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

A.W. FABER-CASTELL PENCIL COMPANY, INC., NEWARK 3, N. J.

If you write maker identify as IEN - 13170

THE METALS HANDBOOK and 1954 Supplement



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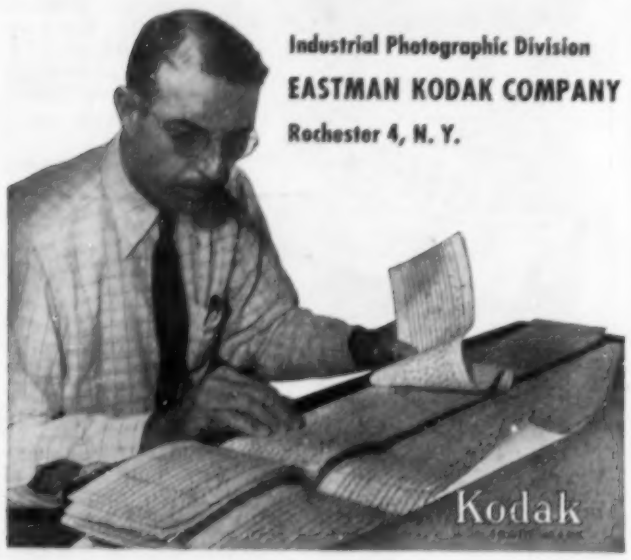
That's the title of a folder we recently published.

It gives you the details about the broad range of photographic films and papers we produce for photorecording purposes, tells you which to use for the application you have in mind, lists the various spoolings and lengths available. If you use photorecording now, or plan to use it in the future, you should have a copy. Just write to:



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Rochester 4, N. Y.

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PIPE SCALE

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ADAMS *Poro-Stone* **AIR FILTER**

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Crane No. 7 Brass Valves with Quick-Change Composition Disc

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The composition disc takes most of the normal wear—stands up well under ordinary usage—seats easily even on air and gas—absorbs foreign particles that might cause leakage in metal disc valves. Rugged construction throughout. Sizes ½ to 3-inch. For steam, hot and cold water, air, oil, gas, gasoline, and many other fluids.

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Industrial Equipment News IEN

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VOL. 22 DECEMBER, 1954 No. 12

Maintenance

Right now is none too early to make your plans to attend the Sixth National Plant Maintenance and Engineering Show and Plant Maintenance Conference. The place is Chicago. The dates are January 24 to 27. Some 20,000 engineers and production executives are expected at the Show and around 2,500 at the Conference. Four hundred manufacturers will exhibit 10,000 products. Fifty-three executives, from leading industries, will head discussions at the Conference on very major subject of interest to maintenance and plant operation.

We suggest that you ask the Show Managers, Clapp & Poliak Inc., 341 Madison Ave., New York 17, N. Y., for a copy of the booklet, "Go", if you have not made arrangements already. It is available on request. It outlines the makeup of the Show, lists the Conference sessions and includes a return postcard on which you can make reservations for yourself and your associates.

The Conference includes three general sessions to be held on the mornings of the first three days at the Arena, adjoining the International Amphitheatre where the exhibits are located. Sectnonal meetings and round table discussions will convene at the Palmer House downtown on the first three evenings.

Sectional meetings, Monday evening, January 24, will be held concurrently on subjects to include maintenance and construction of plant buildings, control of maintenance by standardization and labor measurement, organization of the maintenance force, cost control, sanitation, work measurement and standards, preventive maintenance, training the maintenance force.

Round table discussions, Tuesday and Wednesday evenings, also at the Palmer House, will take up maintenance of electronic control equipment, of electrical distribution and lighting, corrosion control and prevention, lubrication, stores and store keeping, use of punched card systems, safety, protection and fire prevention, project scheduling, estimating and control, power plant equipment, materials handling used in maintenance, maintenance manuals, maintenance in chemical plants, in food plants, in paper mills and paper product plants, in steel mills, in textile mills.

At the Show you will see all manner of equipment for buildings and building services, electrical power and light, employee relations and safety, heating, ventilating, air conditioning, instruments, meters, gages, lubricants and equipment, maintenance tools and supplies, materials handling, paints and equipment, power generation, distribution and transmission, welding, management consultation and services.

IEN will occupy a booth among the exhibitors to offer assistance to any of you, to find specific products or to talk about sources for things you want particularly to locate. IEN will be happy to direct you to given subjects included in the Show or put you in touch with manufacturers on any product or facility subject.

See us at Booth 329.

W. E. Irish.

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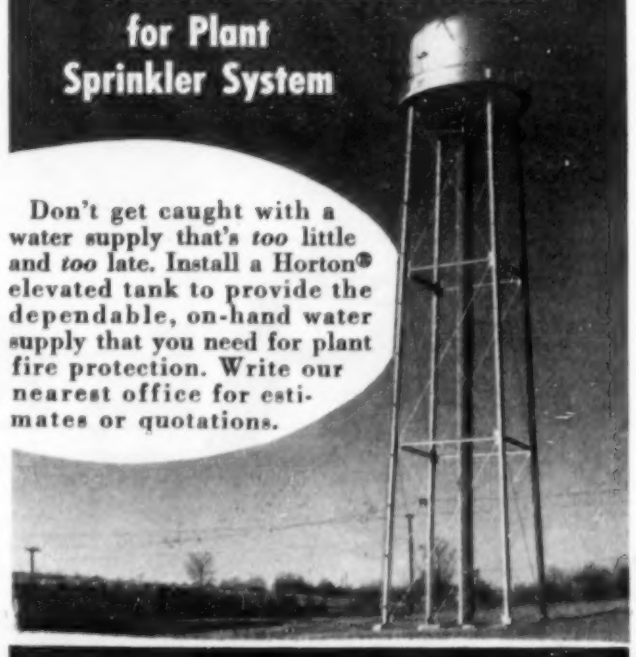
If you write maker identify as IEN-13175

Horton Elevated Tank for Plant Sprinkler System



Don't get caught with a water supply that's *too* little and *too* late. Install a Horton® elevated tank to provide the dependable, on-hand water supply that you need for plant fire protection. Write our nearest office for estimates or quotations.

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Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4½" stroke, 2½" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. 129.00

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LOVEJOY HAS THEM ALL!

Available in 13 standard sizes — diameters 1/2" to 4" — bore 1/4" to 2" — lengths 2" to 10 5/8"

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Because SOUTHERN fasteners arrive on schedule!

Time is Money. We concentrate on prompt service from widest range of sizes and finishes in stock. In a matter of minutes after your order reaches us your fasteners are on their way to you, by the carrier of your choice.

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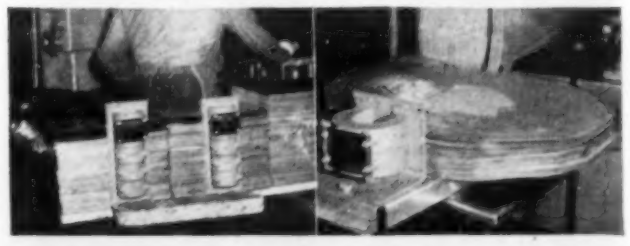
SHEET STEEL HANDLING can be fast and easy when you use Verson SHEET FLOATERS



The Verson Sheet Floater eliminates the need for hand separation of sheets and blanks—the hard part of feeding sheet steel to presses, brakes, shears, etc. By magnetic action, the Sheet Floater forces the pieces apart—causes them to fan out for easy handling. This speeds up the feeding operations, reduces operator fatigue, and releases manpower for other jobs. Available in standard and heavy duty models for handling rectangular, round or irregular shaped pieces. Write for further information and prices.

A Verson Press for every job from 60 tons up.

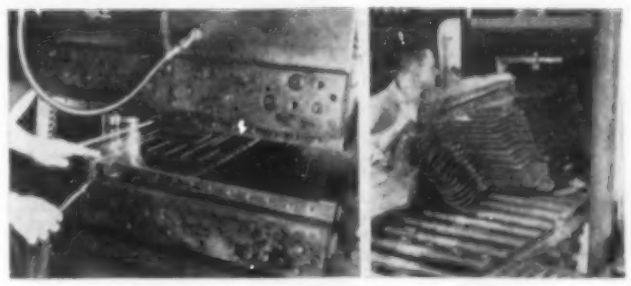
Verson VERSON ALLSTEEL PRESS CO.

9325 S. Kenwood Ave., Chicago 19, Ill., So. Lamar at Ledbetter Dr., Dallas, Tex.

If you write maker identify as IEN-13180

Heating - Roll bonded plates with integral heat exchanger passages

Source: OLIN MATHIESON CHEMICAL CORP.
505 Park Ave., Dept. IEN, New York 22, N. Y.



Dilating . . . and . . . internal flushing

The company announces development of a new process and manufacture of roll bonded evaporator refrigerating plates, to be followed now by general availability of the roll bonded heat exchange plates in required flow passage patterns, sizes and assemblies. Each plate is made of two flat pieces of suitable metal, aluminum, copper, stainless steel, on one of which a pattern that will become the flow passages is applied with a silk screen process. "Paint" that acts as a stop weld material is used to prevent the painted pattern from bonding to the facing metal when heat and pressure are applied.

After painting, the two sheets, one plain, are placed face to face and are spot welded to hold them in correct relative positions. Then the "sandwich" is heated and rolled, the hot rolling producing a complete bond except in the paint covered areas. Rolling operations elongate the pattern, a fact that is taken into account when the silk screen is designed.

The fused sheets are annealed after roll bonding and then one end of the elongated metal plate is trimmed to open the lead-in end of the pattern. A hollow needle is inserted and hydraulic pressure is applied to inflate the passages while the sheet is resting between the platens in a hydraulic press. The painted area thus becomes a pattern of passage-ways integral in the bonded sheet. These passage-ways are flushed out and the sheet is ready for trimming and application in the equipment for which it is intended. The company is prepared to supply engineering advice.

If you write maker identify as IEN-13181

Stapling - Air operated tool grips the work as it drives a staple

Source: FASTENER CORPORATION
860 Fletcher St., Dept. IEN, Chicago 14, Ill.

Duo-Fast

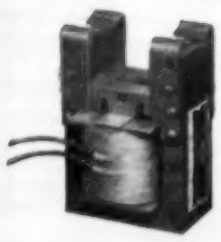
Air Plier designates this new portable air-operated stapling tool in which air pressure at 50 to 110 lb. acts to pull the anvil base up against the tool nose, as the staple is driven, to provide a tight clinching action. The tool has a 4½-in. throat. It is available in a range of models for use on cartons, bags, corrugated inserts, wrap-around protective papers and for production use in furniture and bedding plants.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13182

SOLENOIDS

G-211 solenoid, 10 lbs. at 85% voltage, 1½" stroke.



NA-726 solenoid; 16 lbs. at 1" stroke, 100% voltage.

G-200 line of solenoids, replacement for General Electric solenoids: G-206 to G-213 both inclusive, push and pull.

NA-700 line of solenoids, replacement for National Acme solenoids, size for size, for all modifications.

The solenoids of both the above replacement lines are all thoroughbred Trombetta solenoids. All dimensions of interest to the user are the same as the respective solenoids they replace. The pull and pull characteristics are identical. In either case, we are in a position to furnish replacement units for any and all modifications. They are available for all voltages and frequencies, including direct current.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.

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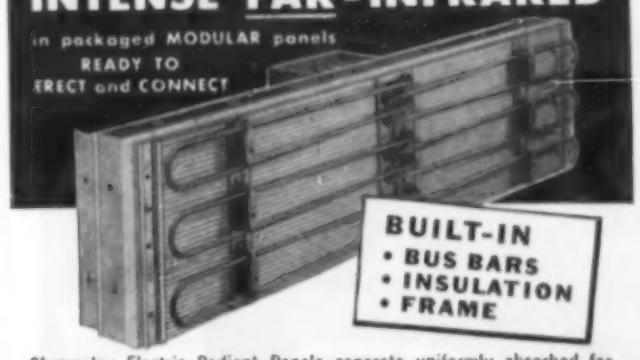
If you write maker identify as IEN-13183

NOW CHROMALOX GIVES YOU INTENSE FAR-INFRARED in packaged MODULAR panels READY TO ERECT and CONNECT



BUILT-IN
• BUS BARS
• INSULATION
• FRAME

Chromalox Electric Radiant Panels generate uniformly absorbed far-infrared heat for baking, drying, curing and other uses. Temperatures up to 700° F. are easily selected and accurately held with "dialed" controls.

THESE ADVANTAGES—AND MORE!

- Longer Wave Length—absorbed equally fast by all colors.
- High Intensity Radiation—more watts per square foot.
- Infinitely Variable Output—from 0% to 100% of capacity.
- Shatter-proof Construction—nothing to break or contaminate work.

GET THIS BULLETIN → It shows you how Chromalox Radiant Panels can save you time, money, work.

OVEN BUILDING SIMPLE AS A-B-C

1' x 4' and 2' x 4' pre-engineered panels quickly assemble into ovens.

Industrial Radiant Heating Division IB-27

EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Units Adv., Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-13184

Mecco SAFETY "WEDGE-GRIP" STEEL TYPE HOLDER

Fast TYPE CHANGE FEATURE

Ideal for use on marking jobs requiring interchangeable type, this unit features a patented Safety Snap for speed and ease in changing type. Made to order in any size, it is made of Mecco Safety Steel to prevent spalling and mushrooming.

Write for Catalog 100

Mecco SAFETY MARKING TOOLS M.E.CUNNINGHAM CO.

1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN-13185

for accurate Voltage Control of small ac machines

- No vibrating or sliding contacts to require attention.
- Special dust-proof design assures maximum protection.
- Rocking Contact sector gives quick regulation with small movement.
- Four simple connections and it's ready to operate.

Rocking Contact VOLTAGE REGULATORS

Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast, accurate . . . sliding friction is eliminated, wear minimized.

V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

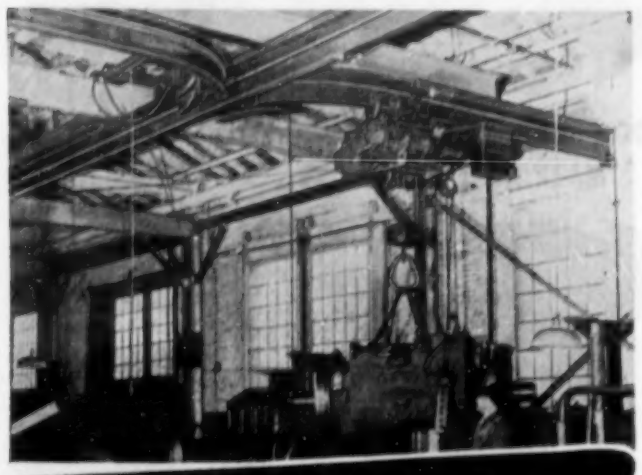
Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6143A.

A-4361 Rocking Contact is an Allis-Chalmers trademark.

ALLIS-CHALMERS

If you write maker identify as IEN-13186

If you write maker identify as IEN-13187



what MONORAIL can do . . .

TO MOVE VARIABLE LOADS

Any size or shape of load, within the capacity of a MonoRail system, can be moved by using slings, grabs or other quickly changed "below the hook" devices for hand or electric operation.

Send for Bulletin C-1.

AMERICAN MONORAIL COMPANY
OVERHEAD HANDLING EQUIPMENT
13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN-13188

Fix it so it stays fixed!

Part: Tang drive spindle.

Problem: Formerly, with AISI 6145, took 14 hours to make . . . then they broke in service, 3 to 6 per month.

Solution: With Carpenter No. 5-317, spindle is made in 6 hours (steel is heat treated at Mill). Costly downtime has been eliminated . . . 3 months without replacement is common.

Savings add up fast when machine parts give LONGER service. That's why Carpenter No. 5-317, chrome-nickel alloy steel, is being used so widely. Local stocks assure fast delivery.

helpful information→

This 12-page book gives complete working data on Carpenter No. 5-317. Also tells how you can do over 95% of all alloy jobs with just 2 steels.

The CARPENTER STEEL COMPANY

Dept. 1254 — 151 W. Bern Street — Reading, Pa.

Please rush me a copy of the Carpenter Booklet, "2 Steels Simplify".

Company_____

Individual_____ Title_____

Address_____

City_____ Zone_____ State_____

(please print)

If you write maker identify as IEN-13189

Truck - Engine driven unit takes interchangeable load carriers

Source: KOEHRING COMPANY
3026 W. Concordia Ave., Dept. IEN, Milwaukee, Wis.

For utility use

Illustrated is new assembly of the Model R-16 Moto-Bug engine driven truck with hydraulic lift forks rating ¾ ton. The fork assembly supplements the 15 cu. ft. hopper body and the 1-ton flat bed platform, previously described IEN-7089-54. The fork assembly will lift its rated load to 84 in. above the floor in 14 seconds. The mast tilts 10 deg. to the rear and 2 deg. to the front. Standard forks are 30 in. in length and are adjustable between 6 and 32 in. in width.

The operator rides in seated position in back of automotive type steering equipment and controls for turning and operation, forward and reverse, at speeds to 6 miles per hour. Drive employs an 8.3 hp. gasoline engine, automotive type transmission and roller chain connection to the drive axle. Pneumatic or soft core solid rubber tires can be specified.

If you write maker identify as IEN-13190

Handling - Vacuum cup lift to pick up and carry non-porous work

Source: INGERSOLL-RAND COMPANY
Dept. IEN, Phillipsburg, N. J.

Bulletin Form 5147

Vac-Lift is a new assembly of the company's Air-Bloc pneumatic hoist carrying a vacuum cup and valve equipped air line connections between the hoist and the cup. The control valves are mounted with two operating levers just above the cup. Compressed air, operating the hoist, also creates vacuum and is used to release the load when one or the other of the valve levers is depressed. Work such as television tubes, sheet metal, plate glass, refrigerator and range housings, stampings, castings, boxes can be picked up, transported and released quickly, safely, easily.

If you write maker identify as IEN-13191

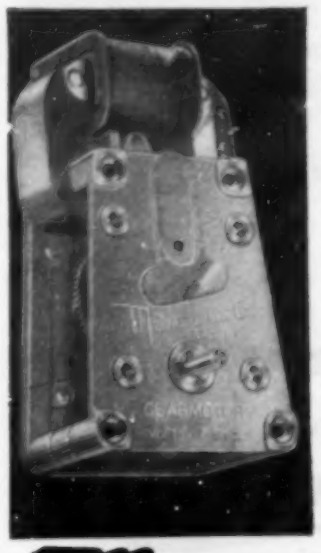
Approximately 500 new sizes have been added by Simonds Saw & Steel Co., 470 Main St., Dept. IEN, Fitchburg, Mass., to its stock line of flat ground die steel. The line includes oil or air hardening steels. Sizes range from 1/64 to 3 in. in thickness, from ½ to 14 in. in width and is in standard 18 in. lengths. The heavier sizes of oil hardening steel are furnished in 36-in. lengths also. The air hardening type is available in standard 36-in. length only. The company offers a pocket size data booklet, "1001 sizes for 1001 uses."

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13192

If you write maker identify as IEN-13193

A Gear Motor for SMALL APPLICATIONS



Our line of small induction motors is designed for applications where small power can be converted to considerable torque at slow output shaft speed. Hundreds of thousands are in use today for operating relays, vending, amusement, coin operated machines, motion displays, combination rotisserie and broilers, etc.

These motors are made in three basic sizes—speeds from 1 to 200 r.p.m. with proportional torque from 5 to 500 in. ounces. Write today for descriptive information, prices and data sheet.

MOTORESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN-13194

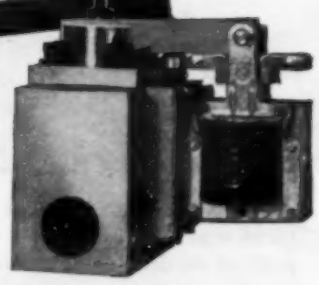
You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN-13195

High Pressure SOLENOID VALVES . . .



have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

Write for illustrated circular C

WATERMAN ENGINEERING COMPANY
725 CUSTER AVENUE • EVANSTON, ILLINOIS

If you write maker identify as IEN - 13196

Raymond Loewy

IN HIS RECENT BOOK says:

"A nuisance that we have to guard against is defacement. One of humanity's strongest urges is the desire to engrave one's name on anything that can be dented, scratched, or embossed. Some go so far as to engrave (or tattoo) their names on their own skins.

In transportation it is a major problem. We have to protect bulk-heads, pier panels, toilet rooms, etc., from the urge of Joe to sketch a little fresco announcing to the world that he loves Julie. Or that the sitting position is favorable to the thinking process; or that So-and-So is a so-and-so, etc., etc. This calls for the use of certain non-defaceable materials."

(From "NEVER LEAVE WELL ENOUGH ALONE")

—Raymond Loewy

Pattern 5-BWL

• RIGID-TEX METALS are three-dimensional, design-strengthened and textured to conceal all dents, scratches, doodles and scuffs—a feature that reduces maintenance costs considerably in an unlimited variety of product applications. Other features: added rigidity; reduced gages for *metal conservation;* impact resistance; buckling strength; glare resistance; versatile fabrication.

Send for new 16-page complete catalog . . on company letterheads please, or see Sweets Design File 1a/Ri.

RIGIDIZED METALS CORPORATION
66412 Ohio Street Buffalo 3, N. Y.
50 Warehouses and Sales Representatives in all Principal Cities throughout the U.S. & Canada
U.S. and Foreign Patents

If you write maker identify as IEN - 13197

SIMPLEX RATCHET LOWERING JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity on *toe or cap.* In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER • SCREW • HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
2527 Gardner Road • Broadview, Illinois

If you write maker identify as IEN - 13198

"CLAUSING VERTICAL MILLERS *are the busiest machines in our plant"...Paul Lebeda*

The new CLAUSING VERTICAL MILLER is a precision machine tool designed for jig, die and fixture making . . . pattern, experimental and tool-room . . . and general production milling. Many new, exclusive features give it greater versatility and ease of set-up and operation than have ever been available in a miller at or near its price.

CONDENSED SPECIFICATIONS

Size of Table	6" x 24"
Longitudinal Table Travel	15"
Transverse Table Travel	5"
Vertical Table Travel	11⅝"
Maximum Distance Spindle to Table	11⅝"
Maximum Distance Spindle to Column	8¾"
Quill Travel	3"

Spindle Speeds: Six, 180 to 3250 R.P.M. — No. 7 Brown and Sharpe or No. 2 Morse Taper, Spindle Optional — Operates from ½ or ¾ HP, 1725 R.P.M. Motor.

"The Clausing Vertical Mills are the busiest machines in our shop due to the variety of operations that can be performed and completed. For speed, convenience, accuracy and higher production at lower cost, they have no equal."

Paul Lebeda, P-a-l Engineering, Ltd.

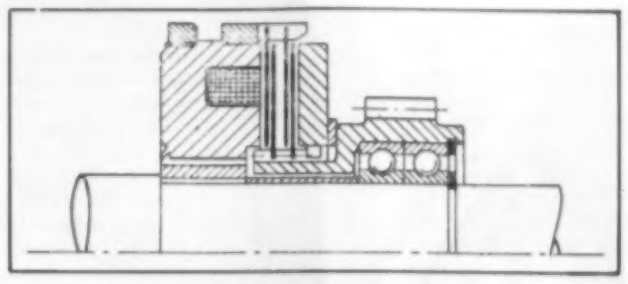
Write For Illustrated Literature Today!

CLAUSING DIVISION *Atlas Press Co.*
12-105 N. Pitcher St., Kalamazoo, Michigan
HEAVY-DUTY PRECISION LATHES & DRILL PRESSES

If you write maker identify as IEN - 13199

Drive - Magnetic clutch, 1.8 to 7,200 ft. lb. start rating

Source: I-T-E CIRCUIT BREAKER CO.
1924 Hamilton St., Dept. IEN, Philadelphia 30, Pa.



Illustrated specifications in Bulletin 5306

The company announces availability of the Electro Clutch, developed in Germany and in successful industrial use particularly in machine tools. The company is prepared to assist prospective users in applying the clutch and in designing or supplying the electrical control unit to fit into the user's equipment or as a standard accessory. The clutch is engaged and released by closing and opening a 24-volt dc. control circuit through a brush and slip ring contact to a magnetic coil mounted in a housing secured to the drive shaft.

Closing the circuit attracts an armature, free to slide in splines on the driven shaft. The armature movement compresses a set of laminated discs alternately secured to the driving body and to the driven shaft. Opening the circuit releases the armature so spring action, formed into the laminations, releases the drive.

The clutch can be employed singly or in multiple, with various combinations of gearing on the output side, to comprise a multiple speed transmission that can be selectively engaged and disengaged by opening and closing the electric circuits. The clutch is insensitive to oily conditions and so can be mounted inside a transmission housing. Current consumption is sufficiently low so telephone type relays can be used in the control circuits.

Housing dimensions range from about 2⅝ to 13¼ in. in diameter by about ⅞ to 4½ in. in length in single assembly or 1⅝ to 8⅞ in. in back-to-back double assembly, these dimensions applying to clutches with a starting torque rated from 1.8 to 2,300 foot pounds.

If you write maker identify as IEN - 13200

Heating - Immersion unit has electric element sealed in quartz

Source: N. J. THERMEX COMPANY
535 Bergen St., Dept. IEN, Harrison, N. J.

For corrosive liquids

Length ranges from 10 to 34 in. and input from 500 to 6,000 watts on 110 to 220-volt current for this new ThermX immersion heater. It employs a fused quartz shell that is chemically inert except in contact with hydrofluoric acid and concentrated hot caustic solutions. The quartz provides excellent heat conductivity and resistance to thermal shock. A chemically resistant protection tube can be supplied.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13201

Rollers available in diameters from 1" to 6½". Lengths as desired. Capacities from 25 lbs. to 16,000 lbs.

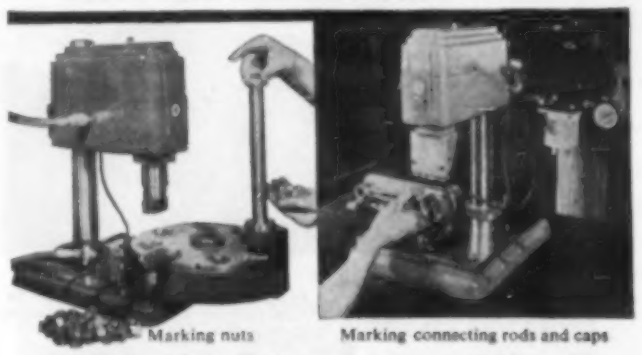
ROLLERS FOR MANY PURPOSES

Logan Rollers are designed primarily for use in Roller Conveyor, but are suitable for many other purposes. Examples are machine parts, feed and guide rolls, truck beds, coil boxes, etc. Rollers are tubular type with ball bearings and either round or hexagon shafts. Bearings can be plain, dust protected, grease packed, or pressure lubricated.

Further information on request.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 13202



Marking nuts — Marking connecting rods and caps

Mark More Parts per Minute

Whether your problem is the marking of nuts, bolts, connecting rods, axles, pots and pans or the branding of screw drivers, pencils, baseballs or ammunition belts—it will pay you to investigate the Automark. This automatic high-speed pneumatic marking machine needs no special jigs or fixtures for average work. Where holding devices are required several standard automatic fixtures are available. We'll gladly design and build special equipment. Write for Bulletin 712.

NEW Electric Typewriter marks metal name plates in one-fifth the time.

AUTOMARK
Automatic Marking MACHINE
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 13203

SAVE... TIME MONEY TROUBLE

Rex Sprockets with Taper-Lock Bushings

Here are the sprockets that give you quick, off-the-shelf delivery...are quick to put on or take off the shaft...and that save you money. Just assemble sprocket and bushing and lock them on the shaft. No re-boring, key seating or drilling and tapping for setscrews required. Get all the cost-saving facts. Send for your copy of Bulletin 53—21. Write Chain Belt Company, 4675 West Greenfield Avenue, Milwaukee 1, Wisconsin.

CHAIN BELT COMPANY

If you write maker identify as IEN - 13204

Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-L, 70 Pine Street, New York 5, New York.

buell
Engineered Efficiency in DUST COLLECTION

If you write maker identify as IEN-13205

FLOCK

TYPICAL APPLICATION — Protects the finish of fishing plugs and tools, deadens rattling noises. Adds richness and color.

Dampens Vibration... Silences Noises...

ADDS BEAUTY, COLOR, SALES APPEAL

Every year more and more product designers find profitable uses for Cellusuede Flock. The fascinating textures of this versatile finish add new vitality, color, and sales appeal to many products. Or, Cellusuede takes on more enduring — even rugged textures for such varied functions as providing a protective cushion, dampening vibration, and silencing noises. Less expensive than fabric, Cellusuede is made principally from cotton, rayon, or hair fibers, and is available in an almost limitless combination of textures and colors to meet your needs.

A DURABLE PROTECTIVE COATING WITH A THOUSAND USES . . .

- Can be applied to any surface which will support an adhesive film.
- Easy to apply on an individual or production-line basis — by spray, vibration, or electrostatic process.
- Wide range of textures and colors to suit your needs.

Free Bulletin, Technical Assistance

Call on Cellusuede for help with any potential application. Unexcelled facilities are available for flocking test samples. Ask for free bulletin describing profitable uses.

CELLUSUEDE PRODUCTS, INC.

520 N. MADISON STREET, ROCKFORD, ILLINOIS

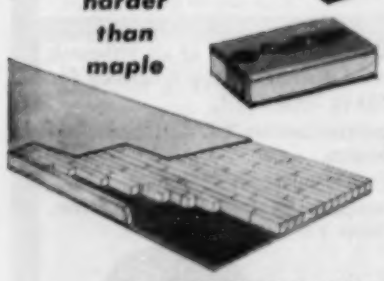
If you write maker identify as IEN-13206

THE JOHNSON CORP., 846 Wood Street, THREE RIVERS, MICHIGAN

If you write maker identify as IEN-13207

Write Today for FREE SAMPLE

30% harder than maple



of this NEW MIRACLE Resinwood®

ShopTop
"HARDER THAN MAPLE"

WORKBENCH TOP

for INDUSTRIAL USE — for NEW OR REPLACEMENT BENCHES

ShopTop is tough, warp-free, splinter-proof, and 30% harder than rock maple. The smooth Resinwood facings resist alkali, acid, oil, and grease.

Excellent for new or replacement workbenches. Available in any size to meet any requirements. Write Today for a Free Sample of the New Resinwood Workbench Top, ShopTop

Available through selected industrial distributors in principal cities or write direct for sample and price list.

QUALITY Since 1868 RIMCO MILLWORK

ROCK ISLAND MILLWORK COMPANY
RESINWOOD DIVISION

Rock Island 3 Illinois

If you write maker identify as IEN-13208

Plastic - Glass reinforced sheet supplied ready for forming and curing

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Strong, moldable

Aircraft structures, automotive parts and assemblies, printed electric circuit panels, shipping containers, materials handling equipment, safety equipment, structural units in process plants, cars, tanks, machine housings are representative products that can be made by forming and curing the new Scotchply brand reinforced plastic. The material consists of one or more sheets of plastic containing linearly aligned glass filaments. Individual sheets are plied together within the laminate for strength in one, two or all directions. Each uncured sheet, as supplied, contains about 60 per cent glass and 40 per cent plastic.

The sheet can be formed by vacuum, fluid pressure or in mechanical dies. Cure time is 35 min. at 330 deg. F., or less at higher temperature. Cure pressure is 25 pounds. Tensile strength is 41,000 lb. per sq. in. for the all-direction sheet. Dielectric strength is 700 volts per mil. Three standard thicknesses are 1/16, 1/8 and 1/4 in. with weight per sq. ft. at 0.58, 1.16 and 2.32 pounds. Standard width is 48 inches. Other thicknesses and weights can be specified. Length is to specification.

Shelf life of the uncured sheet is about 30 days under normal room conditions, four months or more at 40 deg. F. Introductory list price for the all-direction sheet is $2 per lb. in quantities under 500 pounds. It is $1.90 for purchases over one ton. Illustrated data and specifications are contained in a 6-page folder, "Scotchply Reinforced Plastic".

If you write maker identify as IEN-13209

Control - Temperature transmitter regulates instrument operating air

Source: FOXBORO COMPANY
42 Neponset Ave., Dept. IEN, Foxboro, Mass.

Model 12A

Temperature sensitive bulb and capillary tubing, connecting to this new transmitter, are filled with gas to exert force on a flapper nozzle mechanism in proportion to measured temperature. Back pressure, resulting in the nozzle circuit, is amplified through a relay and converted to a force through a bellows. This acts to balance out the initial force and to constitute a 3 to 5-lb. output for transmission through the tubing to a receiving instrument. It indicates, records or controls the process.

Overall temperature range is minus 100 to plus 1,000 deg. F. Spans, ranging from 50 to 400 deg. F., can be specified inside these overall limits. A clamp beneath the housing secures the 7-lb. unit to vertical or horizontal pipe or flat surface.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13210

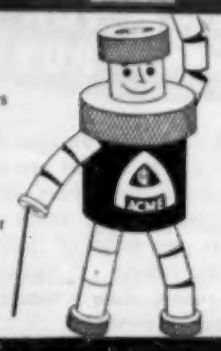
Carry Your Inspection to the Machine with Acme's New Portable

BENCH CENTERS

ONLY 18" OVERALL • WEIGHT ONLY 19½ LBS.

Use Magnetic or Standard Indicators Directly on the Bed Area • Easily sets on Angle Plates for Vertical or Angular Checks • Fits any 12" Surface Plate

Available with Fixed or Retractable Centers Full or Cut Down • Save Time and Money • Avoid Rejects • Speed Production • Order Now!



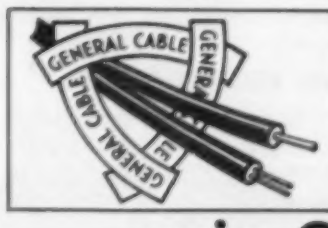
Drill Jig and Fixture Bushings • Roughness Comparison Specimens • Dowel Pins

Chamfer Micrometer Gages • Hardened and Ground Precision Parts • Flat Lapping

ACME INDUSTRIAL COMPANY

215 N. LAFLIN ST.
CHICAGO 7, ILLINOIS

If you write maker identify as IEN-13211



MINERAL INSULATED CABLE

. . . via Graybar

Pyrotenax® is the Safety Mineral Insulated Wiring System made to *outlast* the building in which it is installed. Safety m.i. is moistureproof, rigid yet flexible and unaffected by heat, cold, vapor. It is ideal for wet or dry locations. Can be embedded in plaster, concrete or fill and where directly exposed to weather or continuous moisture. It is its own conduit, trains to any contour, and fits all standard switch and junction boxes. Connectors for safety m.i. are also available via Graybar.

SEND FOR FREE BROCHURE TODAY!

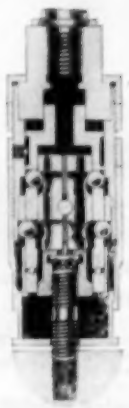
"20 Questions and 20 Answers" about Safety m.i. contains the pertinent data you'll want. Includes uses and application methods. Illustrated.

For complete details on this or any other quality electrical product, contact your nearby Graybar Representative. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.* 460-1212

Call Graybar *first* for . . . Everything Electrical · GraybaR ELECTRIC COMPANY

If you write maker identify as IEN-13212

THE NEW TITAN High Speed 100 Series STUD DRIVER . . .



- **OPERATION TIMED IN SECONDS!** This tool is used by a majority of plants where stud driving is done on a high production basis. Can be operated at any speed which is safe for driving the stud. (It is not necessary to stop rotation at any time.)

NEW COLLAPSIBLE TYPE TRIP GAGE

Patented. Has such a large adjustment range, made possible by a new all-thread main ring, that most common stud projection heights can be secured with only one gage.

- **AUTOMATIC TAKE-UP FOR WEAR ON JAWS**
- **REVERSING POSITION OF CLUTCH GIVES DOUBLE WEAR AT HALF COST**
- **AFFORDS ACCURATE PROJECTION HEIGHTS**
- **USE WITH ANY AIR OR ELECTRIC DRILL OR DRILL PRESS**

Write for Free Literature, TODAY!

TITAN TOOLS — World's Largest Producers Of Stud Drivers And Pullers

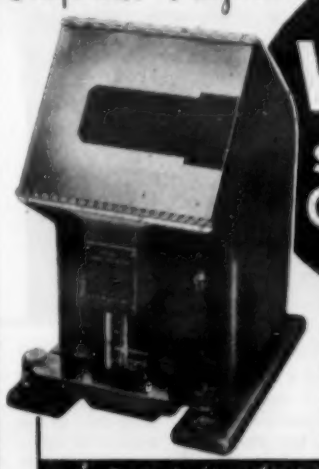
TITAN TOOL CO.

52 MAIN STREET, FAIRVIEW (ERIE COUNTY), PA.

If you write maker identify as IEN-13213

A New Concept in Optical Comparator Design...

new WILDER small parts Comparator model C



- *Vertical Design*
- *Erect Image*
- *Eye Level Screen*
- *Horizontal Stage*

An Entirely New Model Optical Comparator Designed for 100% Production Inspection
ACCURATE - FAST - INEXPENSIVE
Promotes Inspection Economy

If you manufacture mass produced parts that are now being inspected or should be inspected on an Optical Comparator, the new Small Parts Comparator will enable you to inspect them quickly, accurately and economically at a surprisingly low per-piece inspection cost.

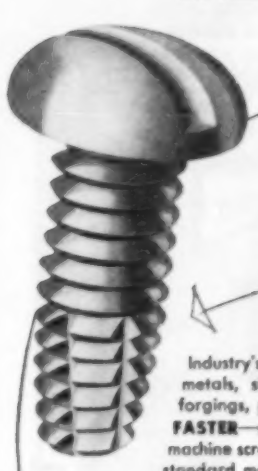
Write for Illustrated Folder—Code GINZE

Geo. SCHERR OPTICAL TOOLS, Inc.

200-EN LAFAYETTE STREET • NEW YORK 12, N.Y.

If you write maker identify as IEN - 13214

The simpler way to save on fastenings to metal and plastics



P-K

Hardened Self-tapping Screws

Industry's favorite for fastenings to sheet metals, structural steel, castings, non-ferrous forgings, plastics, plywood, hard compositions. **FASTER**—no tapping. Simpler, faster than machine screws, riveting, or bolting. Type F cuts a standard machine screw thread as it's turned in. **STRONGER**—no loose fits, or cross-threading. Defies vibration, as proved in millions of applications. **LOWER COST**—saves tapping time and tool expense, permits use of faster power drivers. **IF IT'S P-K... IT'S O.K.** For guaranteed quality, get the *Original*. Samples free. Ask your P-K Distributor or write for information to: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

Type F Slotted or Phillips

PARKER-KALON®

The Original **SELF-TAPPING SCREWS**

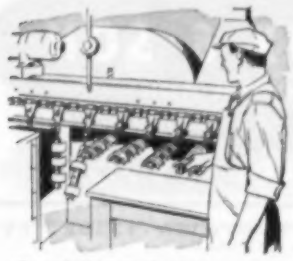
If you write maker identify as IEN - 13215

See how Carboloy magnets save time, money in the shop

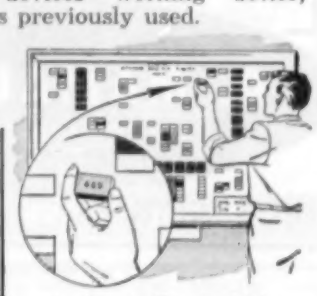
FREE PERMANENT MAGNET IDEA KIT

Send for free magnet kit containing suggestions that really pay off in the plant. See how Carboloy permanent magnets can eliminate costly clamps, jigs, vises . . . how they'll save you time and maintenance costs. Magnets need no electric power. Cost nothing to operate – last forever.

Shown below are a few of the ways magnets are used as mechanical holding devices – working better, cheaper, faster than devices previously used.

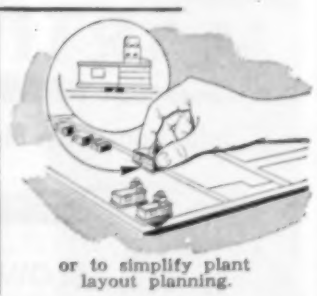


In plating-rack conveyors, for example . . .



to show traffic on vehicle dispatch board . . .

to attach ground from portable welders . . .



or to simplify plant layout planning.

Get a "You-Try-It" Magnet Assortment

Shop Package No. 1 – Contains 48 Carboloy Permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Send coupon today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today.

"Carboloy" is the trademark of the Carboloy Department of General Electric Company

MAIL THIS COUPON TODAY

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Street, Detroit 32, Michigan

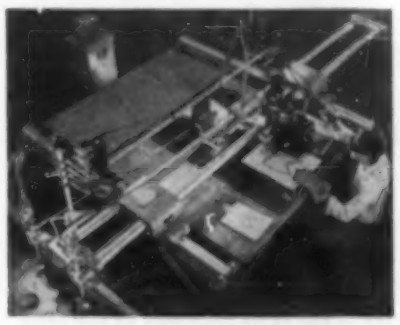
- ☐ Send me free Magnet Idea Kit
- ☐ Send me ___ Shop Package No. 1 at $10.00 each, postpaid.
- ☐ Send me ___ Shop Package No. 2 at $15.00 each, postpaid.
- ☐ Enclosed is check or money order for $ ___. ☐ Send C.O.D.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 13217

Cutting - Oxy-acetylene machine, tracer controlled, takes four torches

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.



Catalog ADC845

Cutting range of this new Airco 48 Duograph is 48 in. in width by 51 in. in length when equipped with one tracing table. Four 48-in. diameter circles can be cut simultaneously with two torches at each end of the machine. Cutting length can be extended to any distance by addition of extra tracing tables. Each table adds 80 in. to the length capacity. Controls are grouped at the operator's station to light the torches, turn the gases on and off individually, operate the tracer and raise and lower the torches.

The torches can be arranged, two at each end of the machine, four at one end, either transverse or parallel to the cross rails. Construction includes sealed anti-friction bearings that require no service lubrication, corrosion resistant cadmium plating to protect the tubular rails.

Three tracers include an automatic electronic unit that employs a paper cut-out or a pen and ink template, a magnetic unit and a manual unit that can be used interchangeable. Basic machine, with two cutting torches and pilot light assemblies, ten cutting tips, a manual tracer, tracing table, solenoid gas distribution equipment for four torches, a straight edge, radius rod and center point for circle cutting, three hose supports and hose lines lists at $3,450.

If you write maker identify as IEN - 13218

Motor Control - Packaged parts to modify standard control design

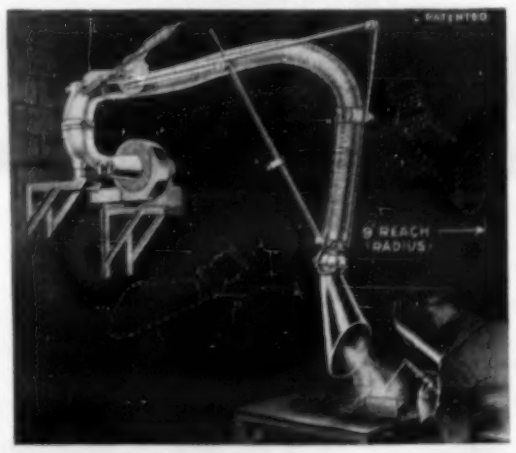
Source: SQUARE D COMPANY
4041 N. Richards St., Dept. IEN, Milwaukee 12, Wis.

For user to apply

The company announces kit packaging of motor control modification and replacement components, through its electrical distributors, to make these components easily available. Included are cover mounted pushbuttons, as shown in the illustration, selector switches, interlocks, overload relays, coils and repair parts. The new pushbutton and selector switch kits are furnished complete with the control unit, hardware and instructions for mounting in the starter cover after removal of a knockout. Normally-open, normally-closed or double-circuit, normally-open and normally-closed interlocks can be quickly added to a standard starter to meet given special requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 13219



RUEMELIN Fume Collector

Removes Welding Fumes at the Source . . .

Your welding department should be well ventilated, free from welding fumes. You can make it that way, quickly and efficiently, by installing a Ruemelin Fume Collector. It produces a powerful suction that draws out noxious gases, smoke and heat at the source. Guards employee health, resulting in less welder fatigue, therefore, greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding area vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing). Write for Bulletin 37-D.

These Fume Collectors are particularly helpful in winter months when doors and windows are closed.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 13220

- *Eliminate mechanical connection*
- *Utilize smaller, lower-cost motors*
- *Cushion out shock-loads*
- *Provide quick acceleration*
- *Balance compounded drives*
- *Transmit full input torque continuously*

If your powered equipment starts under load or has frequent running load variations, you can eliminate most maintenance problems and improve control and performance with Twin Disc Fluid Couplings. New Bulletin 144-D gives complete details on selecting and applying Fluid Couplings on motors or engines, ¾ to 850 hp. Write to Twin Disc, Dept. DS, Racine, Wisc.

TWIN DISC CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION Rockford, Illinois

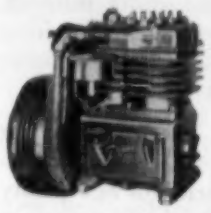
If you write maker identify as IEN - 13221

GET MORE PRODUCTION PER MAN HOUR

with the Help of Dependable Efficient

Curtis

Air Compressors



Available up to 320 cu. ft. Can be supplied base mounted up to 50 H.P. or tank mounted up to 15 H.P. Timken bearing equipped . . . precision built.

Air Cylinders and Hoists

To lift, lower, push, or pull

Pendant air hoist is ideal for lifting or lowering—Bracketed Air cylinder can be mounted in any position for lifting, lowering, pushing or pulling.

For more information write to:

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Mfg. Co.
1941 Kienlen Avenue • St. Louis 20, Missouri

100 Years of Successful Manufacturing Experience

If you write maker identify as IEN - 13222

SECTIONAL BINS

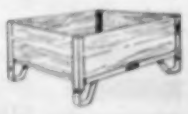
BUILT TO LAST A LIFETIME

For converting skid platforms into skid-bins for handling loose loads. Capacities increased by adding rings. Outside corner angles, radiused for safety, are full height of bin for protection of hardwood sides. Our own lock corner construction reinforces bolts and insures longer life.

RE-NU TOP SKID PLATFORMS

ROLLAWAY SKIDS

SKID-BOXES



LANHAM SKID CO.

DIVISION OF THOMAS TRUCK & CASTER CO.
593 On the Mississippi River Keokuk, Iowa

If you write maker identify as IEN - 13223

Try the Novel Rubber Band Test

Place a rubber band around the handles of a No. 234 "Multi-Plier," and grip a hard-to-hold object, like a piece of pipe. Suspend the plier by one handle only, and note how the jaws hold the weight securely without further pressure. Now try the same test with an ordinary two-piece plier and see what happens.

Sensational "Multi-Plier" Increases Your Gripping Power 10 Times!

Unique Three-Piece, Compound Leverage Design Is Greatest Plier Development in 19 Years

Everyone should own PROTO's new "Multi-Plier"—a multi-purpose, multi-pressure plier that is really a "chest of tools in one." By using a patented three-piece design to compound the leverage, pressure applied to the handles is increased *ten times* at the jaws. That means you can hold square, round and even tapered objects securely with just a slight grip. The plier gets into hard-to-reach places, works safely at any angle, and holds small or large objects, having four different jaw opening positions. First try this revolutionary plier—No. 234—at your PROTO dealer's, and then buy one! Send 10¢ for 68-page catalog of entire PROTO line to

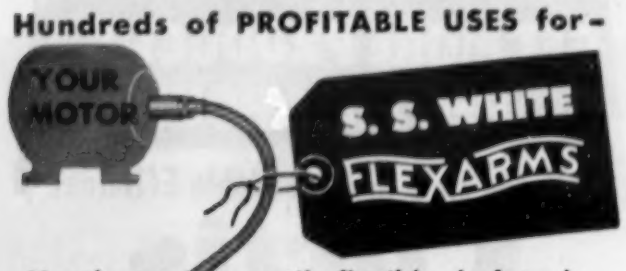
PLOMB TOOL COMPANY
2271Q Santa Fe Ave., Los Angeles 54
5486

PROTO TOOLS

Eastern Factory—Jamestown, N.Y.
Canadian Factory—London, Ont.

If you write maker identify as IEN - 13224

Hundreds of PROFITABLE USES for—



Use these versatile flexible shaft tools

for all kinds of shop work including die sinking, polishing, reaming, grinding and similar jobs. They're quickly and easily coupled to any electric motor with ⅜" or ½" diameter spindles.

They come in two sizes. The 700 Series for precise, delicate work use .092" shank diameter tools. The 500 Series for heavy duty service use tools with shank diameters up to ¼".

WRITE FOR THIS CATALOG. CATALOG T-51 describes Flexarms and many other S. S. White tools for industry. Send for your copy today.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. N, 10 East 40th St.
NEW YORK 16, N. Y.

Western District Office • Times Building, Long Beach, California

If you write maker identify as IEN - 13225

Free!

PAINT INDEX

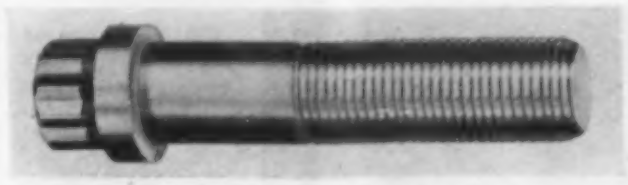
Your own guide to what kind of paint to use for every heavy-duty job. Gives you the benefit of our accumulated experience . . . 70 years of *specializing* in industrial maintenance paints. Write for your *free* copy TODAY!

TROPICAL PAINT COMPANY
1126-1292 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

If you write maker identify as IEN - 13226

Fastening - Socket drive screw fits into a socket head counterbore

Source: FERRY CAP & SET SCREW CO.
2151 Scranton Road, Dept. IEN, Cleveland 13, Ohio



Samples, prices and data upon request

Countr-Bor trade names a new socket drive screw in which the 12-point head is smaller than the collar between it and the screw shank. This collar is the same diameter as the head of a standard socket head screw. Also it clears the outside diameter of the matching 12-point socket wrench so the screw can be driven into a counterbore flush with the bore surface.

Sizes range from ¼ to 1 in. with head collar diameter at ⅝ to 1 1/16 inches. Lengths, with UNC thread, are ⅝ to 3 in. in the ¼-in. size and 2 to 8 in. in the 1-in. size. Patent has been applied for this new fastener design.

If you write maker identify as IEN - 13227

Cleaning - Liquid concentrate to remove grease and dirt from metal

Source: BENDIX AVIATION CORP.
300 Bendix Drive, Dept. IEN, South Bend, Ind.

Complete data upon request

Econoclene trade names a new liquid concentrate to mix with water, solvent or kerosene and to use hot or cold. Application is in still or agitated tanks. The solution also can be brushed or sprayed on large or small surfaces and flushed clean with cold water. One gallon of the concentrate will make 11 gal. of cleaning solution. Packaging is in quarts, gallons, 5-gal. and 50-gal. drums.

If you write maker identify as IEN - 13228

Valve - Pressure regulator with built-in relief on outlet side

Source: ATLAS VALVE CO.
South St., Dept. IEN, Newark 5, N. J.

For low capacities

Connections are made in the side, near the bottom, of this new Type-F spring loaded diaphragm operated pressure regulator. It is available in four sizes ranging from ⅛ to ¾-in. pipe. The valve is suited for initial pressure to 4,000 lb. and reduced pressure at any point from 2,000 lb. down. The valve will handle air, oil or water. It remains tight on shut-off. Variations in initial pressure have little effect on the reduced pressure. A built-in relief valve, on the outlet side, prevents pressure build-up beyond the set point.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13229

SEE THE NEW IMPROVED ROTAB

Inspection operations are simplified, providing closer quality control on radial and angular checking.

One feature is the addition of an optical micrometer microscope with glass vernier recticle which permits direct reading to 5 seconds of an arc.

Checking and measuring planes are conveniently positioned for easy reading.

New controls have been incorporated to simplify and speed the operation of ROTAB in all its movements.

Made in four sizes with 12", 24", 36" and 48" face plates.

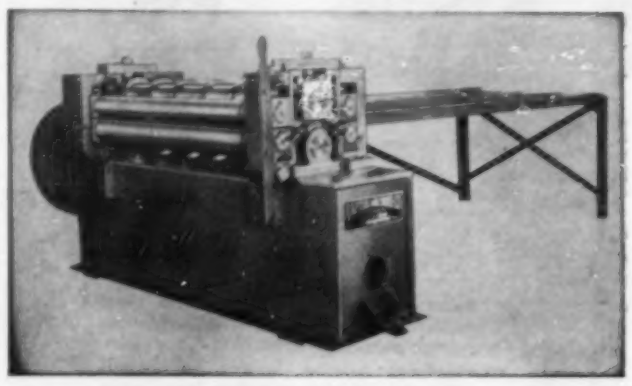
Let us give you the complete story

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit-12, Mich.

If you write maker identify as IEN - 13230

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 13231

PROTECTION

for your men and materials

AT RAILROAD SIDING OR TRUCK DOCK

- Keeps men warm and dry
- Prevents merchandise damage
- Reduces heat loss
- Simple, inexpensive, sturdy
- Folds flat when not in use
- Custom-made to fit

Keeps your loading dock useful every day of the year. Made of heavy, flame- and water-resistant canvas with sturdy frames and hardware. Three scissors arms on each side give rigid support; no bottom bar to impede truck tailgate. Cover roof slopes for rain run-off; canopy extends inside truck or car, keeps walkways dry.

CANVAS—for all your needs—industrial, commercial, private — over 100,000 square feet in stock

Write or phone for full details

A. MAMAUX & SON
120 BOULEVARD OF THE ALLIES

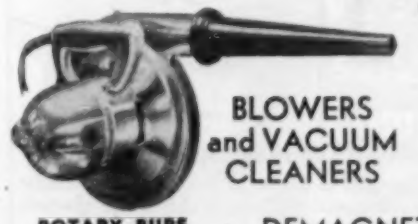
PITTSBURGH 22, PA. phone COurt 1-3500

If you write maker identify as IEN - 13232

MARTINDALE

Selections from Big 64-Page Catalog

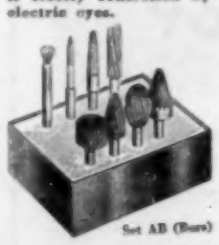
COMMSTONES



BLOWERS and VACUUM CLEANERS

ROTARY BURS AND FILES

Made of high-speed steel. Produced in our own factory where uniform hardness is assured by heat-treating in electric furnaces on which the temperature is closely controlled by electric eyes.



Set AB (Burs)

DEMAGNETIZER — Model D-3

Write for 64-page Catalog No. 29 describing many products for Industrial Maintenance, Safety and Production.

MARTINDALE ELECTRIC CO.
1353 HIRD AVENUE CLEVELAND 7, OHIO

If you write maker identify as IEN-13233

NICHOLSON MAKES

FREEZE-PROOF Steam Traps

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 300 lbs.

BULLETIN 853
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN-13234

Your LOW COST SOLUTION to PROCESS HEAT problems

Save time and money with economical, easy-to-install
CHROMALOX *Electric* UNITS

Only Chromalox gives you a full selection of electric heaters to meet every need. Over 15,000 types, sizes and ratings to choose from, most available from stock—for heating gases, liquids, platens, dies, molds, ovens, soft metals and countless other materials. Chromalox Heaters are easily and inexpensively installed, provide concentrated, controlled heat that is dependable, economical, safe, clean and efficient.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Radiant Panels Advertising, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-13235

Hotpack ELECTRIC HEATTREATING FURNACES

SPECIFY Hotpack

HIGH TEMP. BATHS for Tempering Metal Cleaning
•
ELECTRIC FURNACES
•
OVENS 12 to 250 cu. ft.
•
TEST ROOMS
•
STERILIZERS
•
STILLS

For hardening, drawing, tempering, and annealing or normalizing of dies, punches, gages, fixtures or other parts are performed readily with these redesigned Hotpack Electric Box Furnaces.
This new Hotpack Electric Furnace is fast heating—built for continuous use from 300° F. to 2000° F. It is the only furnace equipped with Automatic Controlling-Indicating Pyrometer and also with Limitstat control in this price field.

SPECIFICATIONS

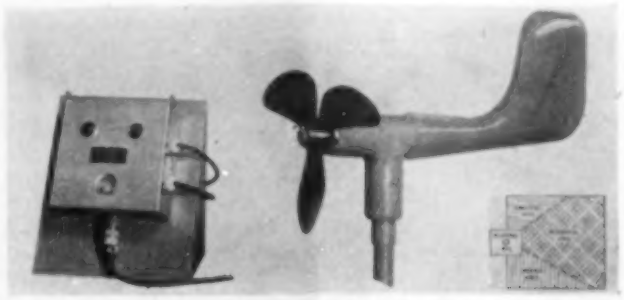
Model	Interior Size W. D. H.	Current Characteristics	Prices F.O.B. Phila.
7076	8"x 8"x 5½"	110 V AC 15 Amp.	$230.00
7074	8"x 8"x11"	115 V AC 15 Amp.	$255.00
7075	12"x12"x11"	220 V AC 23 Amp.	$370.00
7077	15"x15"x16½"	200 V AC 30 Amp.	$575.00
7079	12"x12"x 5½"	110 V AC 15 Amp.	$265.00

THE ELECTRIC Hotpack COMPANY, Inc.
5049 COTTMAN STREET PHILADELPHIA 35, PA.

If you write maker identify as IEN-13236

Control - Wind operated equipment to regulate industrial air pollution

Source: BENDIX AVIATION CORP.
1400 Taylor Ave., Dept. IEN, Baltimore 4, Md.



Bulletin, "Smoked Out?", on request

Vane equipped propeller in this new Bendix-Friez Windtrol is mounted on a swivel support so the propeller will be kept in position facing the wind as the latter's direction changes. The propeller drives a magnet that turns a calibrated spring restrained cup equipped with a commutator and brush to measure angular displacement equivalent to selected wind speed. A similar commutator is used to measure wind direction. The two signals are fed to a relay control housing to actuate correction equipment, when the wind velocity and direction threaten to create bad conditions.

Odorous stack effluents can be treated with counter odorants. Forced draft equipment can be turned on to increase effective stack height to prevent complaints due to the release of fly ash. Scrubbing equipment can be turned on and off so it operates only when the wind is from an objectionable direction. The equipment is available also for recording on a strip chart to keep a check on past performance.

If you write maker identify as IEN-13237

Truck - Electric power lift raises 1 or 1½ ton to 127 inches

Source: LEWIS-SHEPARD
125 Walnut St., Dept. IEN, Watertown 72, Mass.

Details on request

The operator of this new Model-M SpaceMaster truck rides surrounded by a reinforced sheet steel guard measuring 36 in. in height. The guard protects and provides a solid backrest. A magnetic controller provides three speeds forward and reverse with an arrangement in which the operator can move to third speed forward and the truck will go through first and second to this speed automatically. The operator can stop the truck from any forward speed by moving the controller into first speed in reverse to apply dynamic braking so it is not necessary to operate the foot brake.

The truck is available in straddle, open face pallet and platform designs with collapsed mast height at 83 inches. Width is 32 in. at the rear to permit stacking pallets measuring 32 in. in width without loss of space between rows.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13238

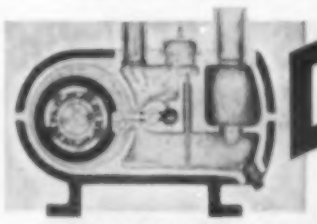
JEVIN MICRO-DRILL PRESS
FOR VERY SMALL HOLES DOWN TO .002"

Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted ⅛" capacity chuck can also be used.

Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SONS, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN-13239



FREE trial

RITE-WAY
VACUUM PUMP

The answer to your problem

The Rite-Way Vacuum Pump has unique features which make it superior for use on MANY TYPES OF MACHINERY. We use it on our own wrapping machines because we could find no other pump so satisfactory.

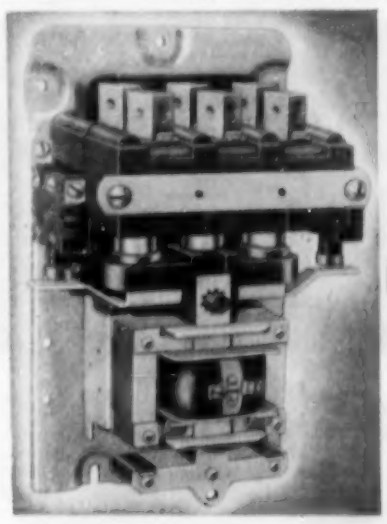
OUTSTANDING FEATURES: No delay in creating vacuum when starting the pump . . . Operation free from friction—no metal-to-metal contact. Seal-off is obtained by positive dispensed oil film circulated through entire pump interior by pressure differences created within pumping chamber . . . Speed is variable from 560 to 2015 RPM, moving 1 cu. ft. to 12 cu. ft. of air.

Built-in muffler chamber reduces exhaust noise to minimum and retains maximum of vaporized oil from being discharged through exhaust. Oil drains back into reservoir. Pump sold separately or available with ⅓ or ½ h.p. motor, as well as 11" x 22" base for mounting.

WRITE FOR FREE TRIAL OFFER, telling us use for which Rite-Way Vacuum Pump is intended. We will send complete information.

PACKAGE MACHINERY COMPANY, Springfield, Mass.

If you write maker identify as IEN-13240



1000 contactors in 1

You're looking at the most versatile solenoid contactor ever developed for building electrical controls.

This Ward Leonard Size 2 contactor is available in *three* basic models, *six* major variations, *one thousand* combinations.

Your savings: reduced stock, minimum panel space, lower assembly costs, less layout and drafting time. Write for Bulletin 4450 to Ward Leonard Electric Co., 33 South St., Mount Vernon, N.Y. 4.15

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN-13241

Keep Stray Metal from Damaging *Calender Rolls*

PLASTIC ON ITS WAY to calendering rolls may contain stray metal. Whether this metal is magnetic or non-magnetic, sitting on top or buried deep, Allis-Chalmers Electronic Metal Detector finds it and keeps it from causing damage. Here are features of this device:

Economical — Uses 110 volts . . . draws only 140 watts . . . costs but a few pennies per day.

Fast Acting—Material may be conveyed through aperture of detector at speeds from 15 to 600 fpm.

Easy to Operate — An A-C serviceman will assist in making installation and instructing operator how to adjust and maintain unit. No other training needed.

Call your nearby A-C office for complete details.
Or write Allis-Chalmers, Milwaukee 1, Wis.

ALLIS-CHALMERS A-4373

If you write maker identify as IEN - 13242

MAKE SPRINGS IN SECONDS!

SAVE
COSTLY
SPECIAL
ORDERS

NEW DI-ACRO* SPRING WINDER

This unique machine eliminates costly special spring orders, saves valuable waiting time. Winds flat, torsion, compression and extension springs to 1½" O.D. Handles round, flat and rectangular wire to ⅛" dimension. Exclusive features in the hand operated Di-Acro Spring Winder assure accurate tension and fast operation without special experience or skill.

FREE-SAMPLE SPRINGS

Send us your spring forming problems—samples or dimension sketches—together with sufficient test material, and let us wind some sample springs for you free of charge. No obligation.

32-Page Catalog gives complete details on all Di-Acro Precision Machines—Spring Winders, Benders, Brakes, Shears, Punch Presses, Notchers, Rod Parters, Rollers, Press Brakes.

*Pronounced Die-ack-ro

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.
318 8th Ave. • Lake City, Minn.

If you write maker identify as IEN - 13243

LOWER THE BOOM ON COSTS
SET RIVETS FAST
2 at a time with the
Chicago "214"

With every press on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches *two* rivets. 14-inch throat accommodates large assemblies. Handles 9/64" diameter or smaller steel tubular rivets—lengths to ⅞". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem...send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 13244

At an average cost of less than $10 per machine NOW you can
REDUCE VIBRATION
SIMPLIFY INSTALLATION
with **UNISORB**® Mounting Pads

Your first saving with this modern machine installation method is in the cost of the UNISORB mounting pads . . . an average of less than $10. per machine. And savings in first cost are only the start.

Add to that the saving of 10% to 30% in cost of time and labor for installation, plus the advantage of eliminating up to 85% of transmitted machine vibration. Get the facts about installing your lathes, presses, grinders, etc. on UNISORB.

Return the coupon today for your free copy of FACTS ABOUT ANCHORING YOUR MACHINES ON UNISORB.

The **FELTERS** Company
208 South Street, Boston 11, Mass.

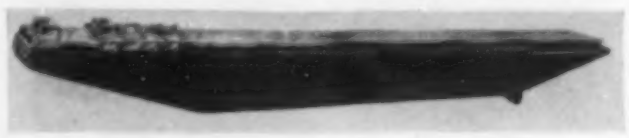
Please send my free copy of FACTS ABOUT ANCHORING YOUR MACHINES ON UNISORB.
Name.....Title.....
(Please Print)
Company.....
Address.....
City.....Zone....State.....
Return to The FELTERS Company
208 South Street, Boston 11, Mass.

TORONTO: A.R. Williams Machinery Co., Ltd.
MONTREAL: Moore Bros. Machinery Co., Ltd.

If you write maker identify as IEN - 13245

Gage - Length measuring instrument to set internal and external gages

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Chesterman design

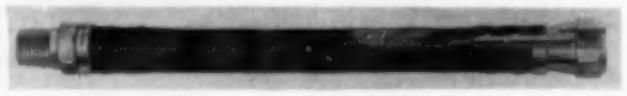
Two models of this Length Measuring Machine provide for maximum work length of 80 and 120 inches. Both mount scales and gaging members on a cast iron base for stability and to make the assembly self-contained. Weights are 300 and 400 pounds.

Readings are made by means of a steel scale and vernier measuring 2.450 in. in length. The vernier reads to 0.0001 in. and to 0.02 mm. The instrument is employed as a master or a means to check the setting of large micrometers, snap gages, end measuring rods, pin gages, standard bars.

If you write maker identify as IEN - 13246

Hose Fitting - Socketless design pushes into hose end, tightens itself

Source: AEROQUIP CORPORATION
300 S. East Ave., Dept. IEN, Jackson, Mich.

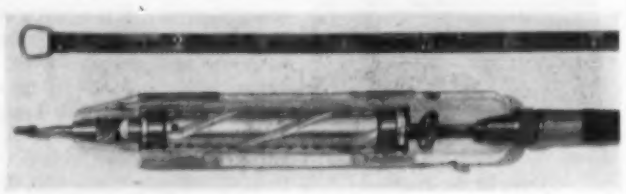


Hand pressure completes assembly

New fitting is designed for use with the Aeroquip 1525 triple-ply cotton reinforced hydraulic hose to handle fuel, air, water and oil at medium pressures. Four sizes are ¼ to ⅝ inch. The fitting is pushed into place in a hose end after the hose has been cut square. The end fits into a collar. Service pressure causes the fitting to tighten in place. Fitting types include male pipe, SAE male and female and SAE inverted male and female.

If you write maker identify as IEN - 13247

Perhaps you have uses for the Nu-Jet 100,000-rpm. pneumatic grinder that are as unusual as the following . . . The



tool is being employed in a cheese factory to rout mold that forms in processing of parmesan cheese. It is removing eyes from potatoes to be used in soup. It is grinding away the sprues on crockery that result in a glazing operation particularly in items such as cups that must seat flat upon a saucer. Another company is using the tool to drill 0.0135-in. air relief holes in cast iron flasks. Manufacturer is Air Equipment Corp., 1355 Michigan, Dept. IEN, Grand Rapids 5, Mich.

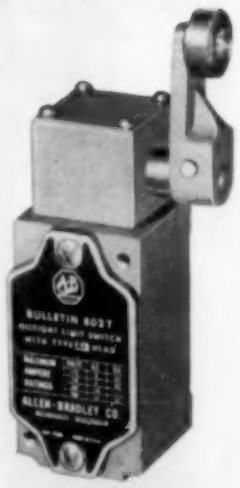
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN - 13248

OILTIGHT
LIMIT SWITCHES

● Here is a new line of remarkably compact Allen-Bradley oiltight limit switches . . . streamlined for fine appearance and built for millions of failure free operations. The operating heads of these limit switches may be attached to the switch body in four definite locations, each 90 degrees apart. A large selection of pushrods, lever arms, and other actuating mechanisms is available. The name plate cover has a synthetic rubber gasket to exclude oil. Write for complete information.

Allen-Bradley Co.
1312 S. Second Street
Milwaukee 4, Wis.



Bulletin 802 Limit Switch with roller lever.

ALLEN-BRADLEY QUALITY
LIMIT SWITCHES

If you write maker identify as IEN - 13249

ALL YOUR NEEDS

INDUSTRIAL
TRACK

- NEW & RELAYING RAILS
- SWITCH MATERIAL
- ACCESSORIES • TOOLS

Take advantage of Foster's "single-source" warehousing convenience. Foster Relaying Rails help to lower initial costs,—provide more tonnage per dollar. Fully guaranteed.

PIPE

1/8" THRU 30"

- SEAMLESS • BUTT WELD
- ELECTRIC WELD
- SPIRAL WELD • LAPWELD

Write for Catalogs IE-12

Call Foster for all your Steel Pipe. You'll get fast, dependable service from pipe specialists, with Shop Facilities for every type of fabrication.

L.B. FOSTER CO.
PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
HOUSTON 2 • LOS ANGELES 5

If you write maker identify as IEN - 13250

DICES 5,760,000 Pellets PER MINUTE

This new dicing cutter cuts plastics extruded in rod form into evenly sized pellets without fines or longs.

The cuts are clean and free from feathers. The machines are made in two sizes, 6" and 10" in diameter.

It has 30 fly knives and may be operated at speeds that will produce 5,760,000 pellets per minute.

Write for complete details of this new plastic pelleter.

TAYLOR, STILES & CO.
44 Bridge Street Riegelsville, N. J.

If you write maker identify as IEN - 13251

Complete Stocks of PLYWOOD
AS CLOSE AS YOUR TELEPHONE!

ARmitage 6-7100

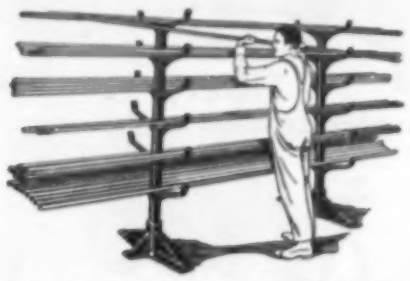
AETNA carries *complete* stocks of plywood from mills all over the world. Out of this wide range of stock AETNA can furnish plywood for any industrial or decorative use.

AETNA gives the widest possible choice: Hardwood plywood for manufacturers to give distinctive elegance to products . . . wall paneling for offices and special furniture . . . plastic surfaced plywood for table tops and counters. All standard sizes and many odd sizes, full range of grades, uniform high quality stock, fast delivery.

AETNA PLYWOOD & VENEER CO.
HEADQUARTERS FOR A WORLD OF PLYWOOD
1724 N. Elston Avenue, Chicago 22, Illinois
BRANCH WAREHOUSES:
Detroit, Grand Rapids, Indianapolis, Peoria, Rockford

If you write maker identify as IEN-13252

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN-13253

WHY GAMBLE... that your motors won't burn out?

Do as scores of original equipment manufacturers do: insist on the magnet wire proved *most reliable* over many years . . . Anaconda's glass-insulated Vitrotex* Magnet Wire which gives hot spot protection as high as 130-135° C . . . or Anaconda's Class H Silotex* Magnet Wire which resists temperatures up to 180° C. See your Anaconda Salesman today. Anaconda's complete line of quality magnet wire, plus constant research into new materials and methods, make him a good man to know. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. *Reg. U. S. Pat. Off. 54431A

ANACONDA® MAGNET WIRE

If you write maker identify as IEN-13254

Sturdy, Strong, Band-Saw Guide

GROOVE IN THRUST WHEEL HOLDS BACK OF BLADE

TWO WHEELS BELOW HOLD SIDES OF BLADE

MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

GUARANTEED SATISFACTION . . . SAVES THOUSANDS OF TIMES THE DIFFERENCE IN COST . . . MORE AND BETTER WORK AT LESS EXPENSE . . . SAFETY IN OPERATION IS GAINED . . . INSURANCE COMPANIES & SAFETY COUNCILS RECOMMEND PADDOCK BALL BEARING GUIDES . . . SHIPPED ON APPROVAL IF VALUE IS QUESTIONED $50 PER SET F.O.B. KANSAS CITY TOP, BOTTOM & ATTACHMENTS (OTHER SIZES FOR LARGE & SMALL MACHINES) . . . SUPPORTS ¼" to 1¼" BLADES 2½" NECESSARY TO INSTALL

PADDOCK TOOL COMPANY

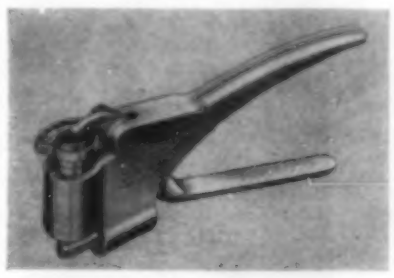
"Guide Makers Since 1920"

1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN-13255

Testing - Portable instrument reads material hardness on dial scale

Source: WEBSTER INSTRUMENT CO.
11856 Mississippi, Dept. IEN, Los Angeles 25, Calif.



Rockwell E 20 to E 100

Materials, with hardness comparable to annealed copper, can be tested with this new Model BB-75 plier type instrument. It employs a round anvil that can be applied on round, square, irregular and tubular shapes within its ¼-in. capacity. Test is made by placing the material between the anvil and the housing and then by applying pressure to the handles until the housing contacts the material. The degree of hardness is read at this point on the dial indicator. The reading can be correlated, by means of a graph, with the Rockwell E hardness scale.

If you write maker identify as IEN-13256

Welding - Steel wire electrode for use in inert gas arc equipment

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

Technical data upon request

Activation agents, employed on a new mild steel inert-gas metal arc welding electrode, control the burn-off rate so stable spray type transfer can be obtained on dc. straight polarity without need for oxygen additions to the shielding gas. The agents modify the penetration pattern. The new wire permits use of inert-gas arc equipment with standard ac. welding power supply.

If you write maker identify as IEN-13257

Pump - Motor driven hydraulic to operate jacks, presses, pullers

Source: OWATONNA TOOL CO.
371 N. Cedar St., Dept. IEN, Owatonna, Minn.

Operates on 110 volt ac.

Number Y-24 is a new single-cylinder reciprocating pump mounted in a 1-gal. oil reservoir and connected to a ½-hp. motor. Piston diameter is ½ inch. Stroke is 0.232 inch. Operating speed is 500 rpm. Free oil delivery is 19.25 cu. in. per minute. Pressure is maximum at 6,000 lb. in continuous duty, 11,000 lb. intermittent duty. **Overall** dimensions are 21 by 13½ by 12½ inches. List price is about $266 to include the pump, a length of pressure hose, the motor, reservoir, valve and pressure gage.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-13258

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

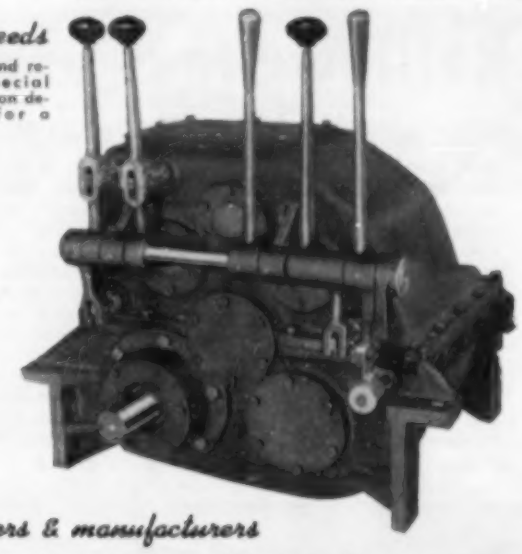
Our complete Catalog No. 9, in full color, is free on request.

Stonehouse SIGNS, Inc. MANUFACTURERS
Stonehouse Building · 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN-13259

ten speeds (forward and reverse) special transmission designed for a ditcher.



designers & manufacturers

TRANSMISSIONS & SPEED REDUCERS

. . . standard and special, for industrial and agricultural machinery, trucks, tractors, refuelers, industrial shovels, cranes, shop and lift trucks, concrete mixers, road builders, diamond drills, machine tools, feed boxes, gear heads . . . On many special machines—a standard WESTERN plate or platform model can often be adapted to give the required spindle speeds—send for catalog and engineering data. Our engineering department is at your disposal. . . .

up to 100 h. p. For Metalcutting Lathes, Milling Machines, Shapers, Turret Lathes, Radial-Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

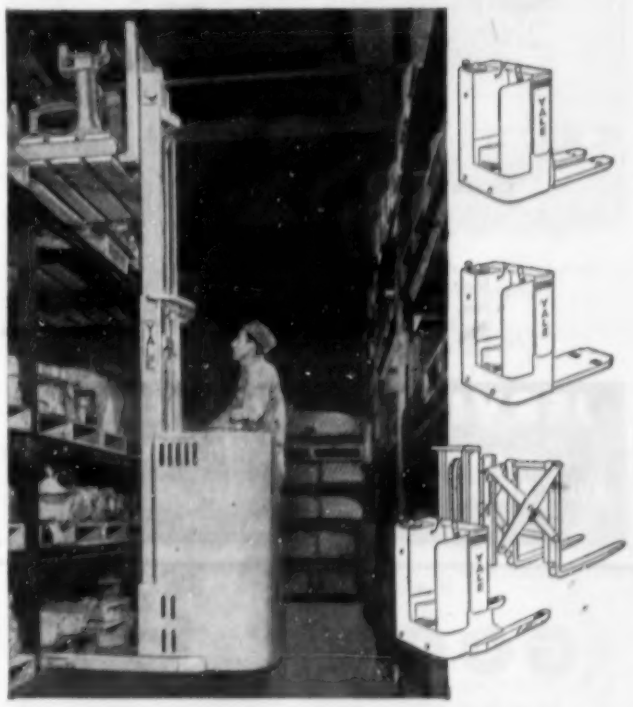
WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. — 8242 BRETTER — DETROIT, MICHIGAN

If you write maker identify as IEN-13260

Latest Member Of A Proven Truck Line

NEW YALE WAREHOUSER



Does big lifting jobs in small space...

Here's a low-cost fork lift truck for high speed handling in 5′ or 6′ aisles . . . with all the advantages that have made the Warehouser line famous: power and durability, small size and light weight, one hand operation with dead man control and many other new features. Like all YALE Trucks and attachments, Warehousers are quality built to exacting standards. For information call your local YALE representative . . . or mail the coupon.

YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 3612
11000 Roosevelt Boulevard, Philadelphia 15, Pa.

Yes, please send me full details on the Warehouser line.

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Co. St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as **IEN - 13262**

Rolling Steel Doors

Save Space . . . Save Time . . . More Practical!

Quick opening, quick closing Mahon Power Operated Rolling Steel Doors will save you space and save you time in any type of opening . . . their vertical roll-up action occupies no usable space either inside or outside the door opening. Merchandise can be stacked within a few inches of the door curtain—and there are no overhead tracks or other obstructions to interfere with crane handling adjacent to the opening. In the illustration below, you see three Mahon Power Operated Rolling Steel Doors installed in openings to an enclosed shipping dock located off a vehicular tunnel under "Northland", Hudson's fabulous shopping center in Detroit's northwest section. The permanent all-metal construction of Rolling Steel Doors means less maintenance, provides greater protection against intrusion and fire, and assures you a lifetime of timesaving, trouble-free service. For complete information, write for new Mahon Catalog No. G-55.

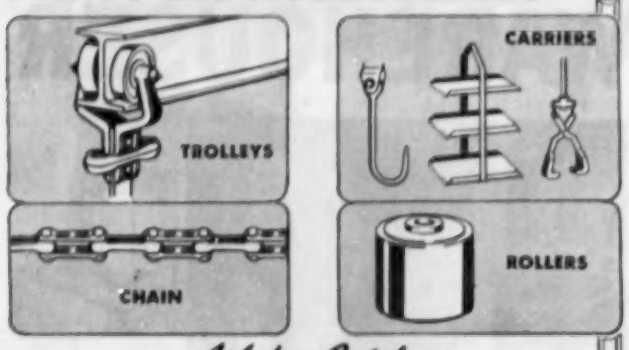
THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as **IEN - 13263**

WEBB

CONVEYOR EQUIPMENT, PARTS and ACCESSORIES



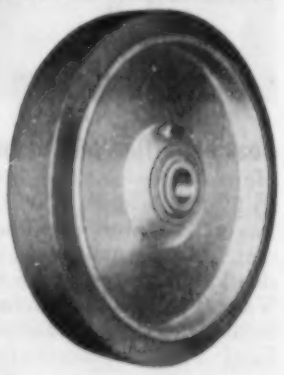
Ask for Catalogs

No. 50—Trolley Conveyors
No. 51—Floor Type Conveyors
No. 52—Power & Free Conveyors
No. 453—Hand Pushed Trolleys, etc.

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

If you write maker identify as **IEN - 13264**

GOOD NEWS ABOUT WHEELS



NEWS! About how 44 centers and only 22 bearings give a choice of 144 sizes to 12" x 4".

NEWS! About American Steelite® light-weight champs—weighing up to 9 pounds less than ordinary wheels.

NEWS! About American Tread-Lock method—the tread is *Rolled On So It Won't Roll Off!*

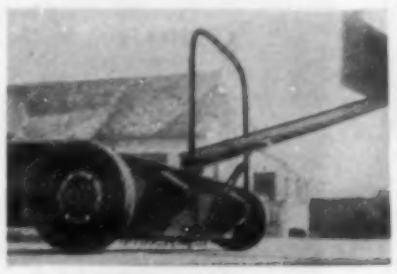
NOW! Get all this NEWS in the NEW bulletin on American Industrial Wheels, from:

The American Pulley Company
4240 WISSAHICKON AVE., PHILADELPHIA 29, PA.
Gentlemen:
I want the NEWS about Wheels—rush me your new American Steelite® Wheel Bulletin.
Name_____
Firm Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as **IEN - 13265**

Magnet - Permanent, wheel mounted to gather tramp iron from large areas

Source: F. W. SHRADER COMPANY
5788 Washington Blvd., Dept. IEN, Culver City, Calif.



Hand or power travel

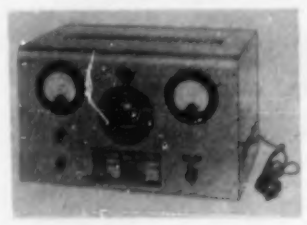
Nails, wire, miscellaneous pieces of ferrous metal can be gathered from large areas with this new Type PFH permanent magnet. It is available in effective widths of 48 and 60 inches. It is mounted on rubber tired wheels equipped with roller bearings.

Control centers at a lever that can be locked in discharge position so an operator can roll the unit away from a pile of discharged metal or can shift it for metal pick-up. Recommended operating speed is 10 mph. or less.

If you write maker identify as **IEN - 13266**

Rectifying - Selenium unit for adjustable dc. output to 10 volts

Source: RAPID ELECTRIC CO.
2881 Middletown Road, Dept. IEN, New York 61, N. Y.



About $115

Input to this new Model 1020F variable output selenium rectifier is on 110-volt single phase 60-cycle ac. Rated output is 20 amp., continuously variable to a maximum of 10 volts. The housing mounts a voltmeter and ammeter, a pilot light, starting switch and fused overload controls. The unit can be operated at 20 per cent overload for intervals to two hours without harm.

If you write maker identify as **IEN - 13267**

Conduit Fitting - Cable box with clamp and ears for loomwire, cable

Source: NATIONAL ELECTRIC PRODUCTS CORP.
140 Stanwix St., Dept. IEN, Pittsburgh 22, Pa.

UL listed

Catalog 2761 designates a new 4-in. octagon cable box made of 14 gage steel with electro-galvanized finish. Priouts take cable sizes from 14/2 to 12/3. The sides have 2½ in. knockouts. The back has a ½-in. knockout and 4 holes. Cables enter from the side or rear in positions that keep them free from the edges of the knockouts. A recessed back gives a little, when it is nailed, to maintain constant tension and hold the box in permanent position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13268**

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG

eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock St., Quincy, Mass.

If you write maker identify as **IEN - 13269**

CESCO *RIGHT... before your Eyes!*

Auxiliary Filters

PREVENT CLOGGING OF CARTRIDGES

Auxiliary cellulose filters, now available for CESCO No. 99 ORGANIC VAPOR RESPIRATOR, prevent cartridge clogging during spray painting. Together with the dual 85 cc cartridges they provide high absorptive capacity and low resistance to breathing. Easily attached without tools.

See your CESCO distributor

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY - 2336 Warren Boulevard, Chicago 12, Illinois

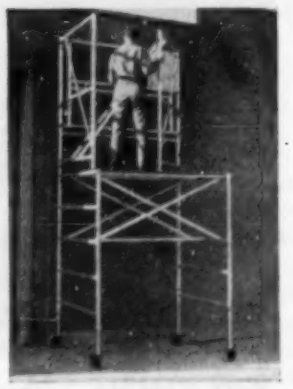
CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as **IEN - 13270**

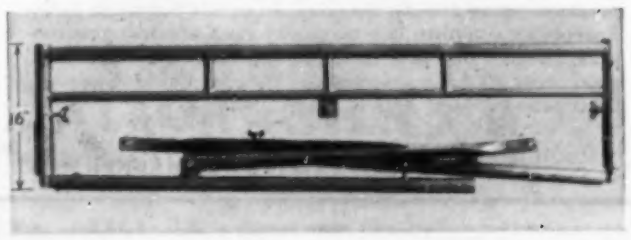
A PAID NEWS ADVERTISEMENT BY THE PATENT SCAFFOLDING CO., INC.

EXTRA-WIDE LADDER SCAFFOLD



New extra-wide aluminum ladder scaffold is 4'6" wide to provide added stability for maintenance, relamping and similar operations and will clear obstructions up to 5'10" high by 9' wide. As shown, it may be used as the "base" for a 4'6" x 6' "Fold-A-Way" Scaffold, giving 5'10" x 5' clearances. Ladder frames for base section are 6' high. Intermediate and extension sections are 5'4" and 4' high. Use handy inquiry card or write **The Patent Scaffolding Co., Inc.,** Dept. IEN, 38-21 12th St., Long Island City 1, N. Y.

FOLDS TO 16-INCH WIDTH



Folding steel end frame is designed to meet the problem of erecting scaffolding inside oil tanks, boilers, furnaces and similar equipment with openings as small as 16" in diameter. Frame has hinged legs for folding into a compact 16" x 5' size, permitting erection of "Trouble Saver" Sectional Scaffolding to required height and width. Folding legs are securely held by collars that slide down over hinges. "Trouble Saver" Folding End Frame weighs only 47 lbs. and has a 2000 lb. load capacity. Use handy inquiry card or write **The Patent Scaffolding Co., Inc.,** Dept. IEN, 38-21 12th St., Long Island City 1, N. Y.

ADJUSTS SCAFFOLD HEIGHT

New ball-bearing extension leg raises "Fold-A-Way" and other PS Co. aluminum sectional rolling Scaffolds to required heights with maximum speed and safety. Two quick turns of collar unit give one full inch of adjustment, up to 24 inches. Mechanism cannot be left in unlocked or partially locked condition. Unit never drops or runs down when weight is applied. Use handy inquiry card or write **The Patent Scaffolding Co., Inc.,** Dept. IEN, 38-21 12th St., Long Island City 1, N. Y.

Branches in all principal cities.

If you write maker identify as IEN-13272

GARLOCK
PIPE THREAD COMPOUND
For Permanently Tight Joints

Garlock Pipe Thread Compound is a superior material for a permanently tight joint. Does not harden or shrink; does not drip; does not spoil or deteriorate. Keeps joint from "freezing" and protects against rust and corrosion. Easy to apply. Use Type A against steam, water, air, gas, heavy oils or alcohol; use Type B against light oils or solvents.
Available in 1-lb., 2-lb., 4-lb. cans and in larger containers. Order from your nearest Garlock office or write for Folder AD135 today.

Branch offices in most principal cities.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

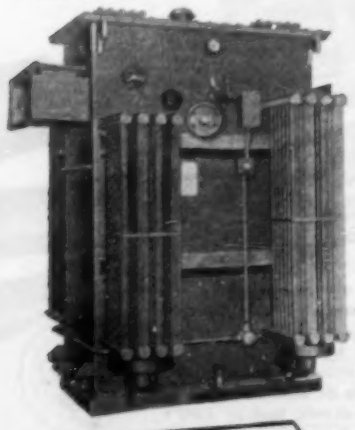
If you write maker identify as IEN-13273

NEW
Wagner Liquid-Filled Load Center Transformers designed for flush mounting

Now, Wagner Nonflamol (non-inflammable liquid-filled) Load Center Transformers are available in a new, improved close-coupled design, as well as in the standard throat-connected design. These transformers can be flush-mounted with any make of switch-gear to form a neat, compact, streamlined unit substation for modern industrial service.

Wagner close-coupled transformers are available in ratings from 500 through 2000 kva. They are carefully designed to meet your distribution requirements.

Look to Wagner for better transformers that assure a continuous, dependable flow of power. Your nearby Wagner engineer will be glad to help you solve your load-center problems. Call the nearest of our 32 branch offices, or write us.



Wagner

Throat-Connected Unit Substation Transformers

For outdoor installation, or for applications where it is desirable to locate the transformer away from the switch-gear, Wagner can furnish these liquid-filled transformers in ratings to 2000 kva, 15 kv and below. Bulletin TU-13 gives full information.

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN-13275

Drilling - Dial controlled head for small holes on a jeweler's lathe

Source: LOUIS LEVIN & SON INC.
3610 S. Broadway, Dept. IEN, Los Angeles 7, Calif.

Data on attachment and drills in Bulletin N

The drill spindle in this new Levin head, for very small hole drilling, is carried by two adjustable cross slides mounted on the main longitudinal slide. Prior to start of a drilling operation, the slides are employed to accurately align pivots carried in the spindle and the lathe. Then both lathe and drill head spindle rotation are started and the operator advances the head by operating the hand lever.

This action brings the main slide against a stop screw fitted with a graduated dial so the slide cannot advance any faster than the operator turns the dial, after contact is made. He can retract the slide to clear chips from the drill and then return it to exact position established by the dial where the drill ceased cutting. Setting the stop screw determines the depth to which the drill can be returned.

A second stop screw controls the final hole depth. On the face of the head is a dial indicator that enables the operator to watch progress of the work. It also indicates the point at which the drill first contacts the work.

If you write maker identify as IEN-13276

Cutting - Abrasive disc machine with wire brush head to remove burrs

Source: WALLACE TUBE CO.
1304 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

Note burring head

Work is clamped on both sides of the disc, in this new 10-in. abrasive cutting machine, by means of a lever operated cam. A cut is made by bringing the disc head down and then releasing it for return. The work is released and the cut end is inserted into an opening in a cylindrical guard surrounding a wire brush wheel mounted on the motor shaft. This wheel removes any burrs that may have been formed on the work end. A guard also is mounted vertically in front of the cutting position.

Drive is by a 1½-hp. motor for operation on 220/440-volt three-phase 60-cycle ac. Control centers at a push button station. The disc spindle is mounted on ball bearings. The machine is available with a tubular stand and rubber tired wheels for portable application. It also can be mounted on a bench. Cutting capacity is for tube to 1½ in., pipe and solid bar to 1 in., structural shapes to 2 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-13277

FOR FASTER HEATING AND COOLING . . . BETTER TEMPERATURE CONTROL

TRENT "FOLDED-AND-FORMED" Heating Elements

Exposed ribbon type resistor heating elements out-perform sheath type elements where high-temperature, controlled electrical heat is essential for efficient processing operations. The unique construction of Trent "Folded-and-Formed" ribbon type elements further assure maximum rigidity for long-life and low-cost maintenance *plus* maximum heat transfer and radiation . . . greater radiating surface per square inch of element cross-section than any other type of electrical heating element! You get more controlled heat, faster . . . at lower costs.

Trent "Folded-and-Formed" Heating Elements are available in easily installed Standard 12" x 12" Racks or Custom-built Racks of any size or shape to exacting dimensional specifications . . . for required K.W. at temperatures up to 2000°F.

TRENT ENGINEERING SERVICE

Experienced Trent Heating Engineers will analyze your heating requirements to determine the efficient and economical installation for your operations. Consult our Engineering Department if you have a heating problem, or request to see the new Trent "Folded-and-Formed" Heating Element booklet.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE., PHILA. 27, PA.

If you write maker identify as IEN-13278

feature for feature...
THIS NEW SQUARE D VOLTAGE TESTER
Tops them ALL!

for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-13279

FEWER REPLACEMENTS · LONGER SERVICE LIFE

JOB-PROVED MAINTENANCE TIPS

show you how others cut costs with neoprene, Du Pont's chemical rubber—in every issue of the free

"NEOPRENE NOTEBOOK"

Mail the reader-service coupon today for your free subscription.

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

NEOPRENE
The rubber made by Du Pont since 1932

If you write maker identify as IEN-13280

RUBBER INSULATION 0 to 5kv
the complete story on

UNSHIELDED POWER and CONTROL CABLE

If you're a user of rubber insulated cable, this new book is for you. Now, for the first time under one cover, you have the complete story on:

- **Okolite-Okoprene 0 to 5kv unshielded power cable**
- **Okolite-Okoprene 600 volt control cable**
- **engineering data**
- **installation and handling techniques**
- **drawings and instructions for splicing and terminating**

If you need a cable for safe operation at 4160 volts, *unshielded* Okolite-Okoprene cables are your answer. Write for Bulletin IE-1085 to The Okonite Company, Passaic, N. J.

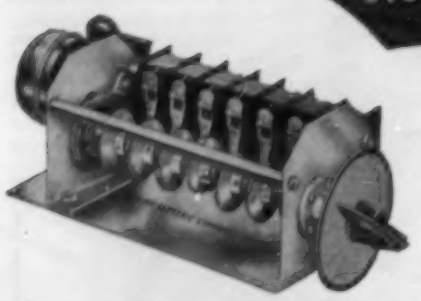
2730

OKONITE *insulated cables*

If you write maker identify as IEN-13281

NOW IS THE TIME

For Immediate Delivery.... The NEW ZENITH Multi-Circuit CYCLE TIMER



For ACCURATE TIME ON ALL YOUR ELECTRICAL OPERATIONS!

Yes, you get immediate delivery on the Zenith, Multi-Circuit Timer . . . the unit that's specially designed to accurately, dependably time any operation. Thousands in use in hundreds of applications—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning equipment. The Multi-Circuit Cycle Timer and other Zenith units solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For full information and prices, send for illustrated Bulletin No. 142

See Classified Telephone Directory for Name of Local Representative.

ZENITH ELECTRIC CO.

146 W. WALTON STREET • CHICAGO 10, ILLINOIS

If you write maker identify as IEN-13282

FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, and removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too — and it may suggest an entirely new application in *your* plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.

SUCCESSORS TO VONNEGUT MOULDER CORPORATION

2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN-13283

WIGGINS INST-O-MATIC COUPLINGS

QUICK—DISCONNECT

use WIGGINS COUPLINGS for

OIL
AIR
WATER
L P GAS
HYDRAULIC OILS
PNEUMATIC
GASOLINE
REFRIGERATION
COOLANTS
HELIUM
NITROGEN
AMMONIA
KEROSENE
FUEL OIL
DIESEL OIL

Manual Quick Disconnect (Push-Pull Positive Action)

Automatic Quick Disconnect (Breaks Away at Pre-determined Weight Load)

SIZES: 1/4" TO 2 1/2

WRITE FOR FURTHER INFORMATION

Wiggins

E. B. WIGGINS OIL TOOL COMPANY, INC.

3424 East Olympic Boulevard, Los Angeles 23, California

If you write maker identify as IEN-13284

Valve - Cam operated design to blow finished work from a press

Source: F. J. LITTELL MACHINE CO.
4123 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

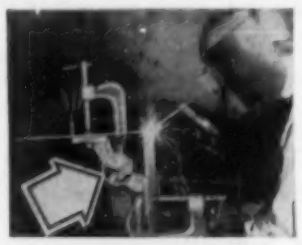
Bulletin Section 9K

New design for delayed action, in which finished press work cannot be freed from the dies until the press is close to the top of its stroke, has been added to the company's line of air blast valves and associated equipment. Equipment includes a cam or cam strap to mount on the press crank, a bracket support for the valve, a length of hose connecting to a bracket supported adjustable nozzle. The line also includes standard valves that provide a short powerful air blast and bleeder type valves in three-way design to actuate small kicker cylinders.

If you write maker identify as IEN-13285

Gage - Adjustable work positioner employs C-clamps at positioning plates

Source: JERGENS TOOL SPECIALTY CO.
712 E. 163rd St., Dept. IEN, Cleveland 10, Ohio



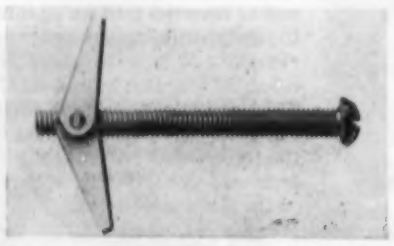
For assembly use

Duo-Square is an adjustable gage that presents two clamping plates. These plates can be set at a required angle, in relation to each other, after loosening a clamping handle and moving the plate arms in line with graduations near the center. The clamp is then locked and C-clamps are employed to hold work in position as shown in the illustration. The holder is made of cast aluminum. It is designed to use in a vise.

If you write maker identify as IEN-13286

Fastening - Toggle bolt anchors with access to only one side

Source: RAWLPLUG COMPANY
271 Church St., Dept. IEN, New York 13, N. Y.



Corrosion proofed

The nut wings on this new bolt are spring backed to stand normally in the position shown in the illustration. They fold along the bolt shank when the bolt is entered into a hole in a hollow wall. As soon as the wings pass through the hole they spring apart and the bolt can be tightened with access to only that face of the wall or panel from which the bolt was entered. Sizes range from 1/8 to 3/8 in. in round or flat head design. Shank length is 2 to 6 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13287

A PAID NEWS ADVERTISEMENT BY SOLA ELECTRIC CO.

"SOLAVOLT" A-C POWER SUPPLY—

Adjustable 0-130v, Regulated ±1%
Less than 3% Harmonic Distortion

The 'Solavolt" is a self contained portable unit for the most exacting laboratory applications. It provides ±1% regulation for line input changes from 95-125 volts . . . plus the following special features: 1) One pair of jacks regulated ±1% and adjustable from 0 to 130 volts; 2) One standard receptacle regulated ±1% and adjustable from 0 to 130 volts; 3) One standard receptacle for fixed value 115 volts regulated ±1%; 4) Total harmonic distortion less than 3%; 5) Regulated response 1.5 cycles or less; and 6) Fused against overload.

The "Solavolt's" voltage regulation is automatic. Except for the rotor of the autotransformer, there are no moving parts, no manual adjustments, and no tubes or other expendable parts. Any or all outputs may be used simultaneously within total maximum rating:

"Solavolts" are stocked by our electronic distributor in 250 va and 500 va capacities. Write for Circular 13L-CVL-193.

SOLA ELECTRIC CO.

4633 West 16th Street, Chicago 50, Illinois

If you write maker identify as IEN-13288

Speed your 1954 Traffic with a 28 year old idea

Above is one of seven Nutting Towline Systems currently saving 25% on handling costs for Consolidated Freightways, Inc.

Nutting Since 1891

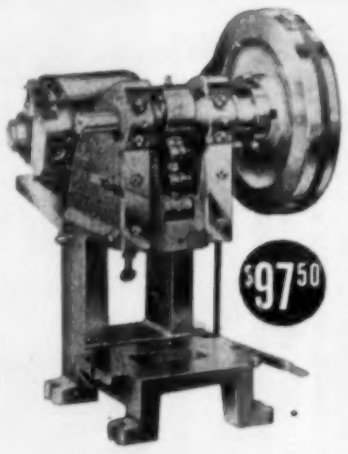
Nutting has been designing trucks for use with overhead or under-floor conveyors since 1926 and now provides 13 standard models with 5 types of tow mechanisms. Whether you have or are considering an overhead or under-floor system, whether your loads are 300 or 3,000 lbs., Nutting has the trucks for the perfect solution to your materials handling problem. Write for Bulletin 54-TL or call your Nutting Sales Engineer—he's listed under "Casters" or "Trucks" in your classified directory.

Export Sales Representative: School International, Inc. 4237 North Lincoln Ave., Chicago 18, Ill.

NUTTING TRUCK & CASTER CO.
2015 DIVISION ST., FARIBAULT, MINN.

If you write maker identify as IEN-13289

CUT COSTS with ALLEN Punch Press



$97.50

2-Ton Power Bench Type

less Motor

- Powerful
- Dependable
- Economical

FREE CIRCULAR

30-Day Money-Back Guarantee

Order TODAY

Price $97.50 F.O.B., Clinton, Mo. (Includes motor bracket, V-belt, motor pulley, less motor)

For light work — stamping, forming, riveting — metal, fiber or other material.

Overall height 19 3/8" . . . Base size 9" x 8 1/4" . . . Die bed 6 1/4" x 8" . . . Ram face 1 1/2" x 3 1/2" . . . Ram stroke 3/4" . . . positive 3/4" ram adjustment . . sturdy, single pin, non-repeat hand lever clutch . . . V-belt drive . . . weight 105 lbs.

Requires only 1/3 H.P. motor.

The machine of a thousand uses! Adequate for many types of work now done on large presses at greater expense.

Dealer Inquiry Invited

ALVA F. ALLEN • Dept. IE • CLINTON, MO.

If you write maker identify as IEN-13290

AMP SOLISTRAND TERMINALS

NOW UP TO 600,000 CIRCULAR MILS!

AMP "SOLISTRAND" terminals, strongest and best of all non-insulated solderless connectors, are now available in wire ranges up to 600,000 circular mils! Wire is formed into one homogeneous mass by a deep pressure crimp. Use on either solid, stranded, or irregular shaped wires or combinations of each. Crimp with AMP's light weight hand hydraulic tool or AMP's new DYNA-CRIMP pneumatic-hydraulic power tool.

SEND FOR FREE CIRCULAR MIL AREA CHART—

AMP

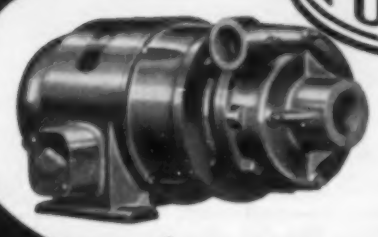
AMP Trade-Mark Reg. U. S. Pat. Off. © 1954 AMP

AIRCRAFT-MARINE PRODUCTS, INC.
POWER TERMINAL DIVISION
2100 Paxton Street, Harrisburg, Penna.

If you write maker identify as IEN-13291

FACE-MOUNT, CLOSE-COUPLED & FLEXIBLE-COUPLED WATER TRANSFER PUMPS

PEERLESS PUMPS



America's MOST COMPLETE LINE AVAILABLE IN TYPES, MODELS AND SIZES from ½ to 150 hp—for capacities from 10 to 5500 gpm—for heads up to 260 ft.

For all water transfer services. Sizes up to 5 hp equipped with mechanical shaft seals. All sizes are bronze fitted. Economical to maintain and operate. Highly efficient in performance.

DESCRIPTIVE 24 PAGE BULLETIN No. B-2300 is complete with illustrations and pump selection charts.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26, Los Angeles 31, Calif. • New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas; Phoenix; Los Angeles, Fresno, Calif.

If you write maker identify as IEN-13292

No sir . . . They're OK hardened bedway cross sections!

Made by The Ohio Knife Co., they show the diversified shapes and sizes supplied. OK's special process of manufacture permits building to your specifications in a wide range of design.

Specially heat-treated tool steel makes OK ways practically wear-proof, helps maintain constant accuracy throughout the life of the machine. This extreme hardness, 65-66 Rockwell "C", is uniform to 3/16-inch depth or more. Long-wearing tool steel is welded to a soft steel backing under 2500 tons pressure. Precision equipment finishes the bedway by grinding to tolerances up to ± .0002 inches.

Manufacturers of . . .
OK WELDED HIGH SPEED SHEAR BLADES • OK SLITTER KNIVES
TUBE CUT-OFFS • OK SOLID STEEL SHEAR BLADES
HARDENED WAYS AND SLIDES • ROTARY SHEARS

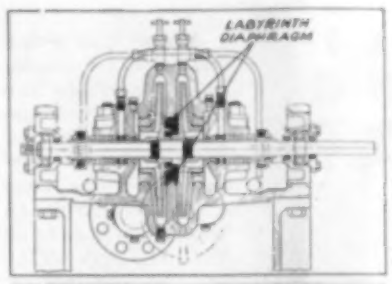
Write today to Dept. 17-J for comprehensive bulletin, or send us your bedway specifications.

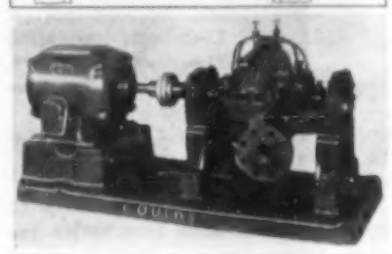
THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN-13294

Pump - Two stage centrifugal rates to 1,000 gpm. and 1,000 ft. head

Source: GOULDS PUMPS CO.
301 Falls St., Dept. IEN, Seneca Falls, N. Y.





Specifications on request

Opposed impellers, in this new Fig. 3305 pump, provide hydraulic balance. Thrust balance is assured by a new labyrinth diaphragm. The pump is available in five sizes with standard stuffing boxes or mechanical seals. Standard construction includes sealed bearing housings, bearings protected against moisture and dirt, cowl type glands suitable for use with quenching liquids, stainless steel impeller keys, teflon water seal rings, corrosion resistant gland bolts, renewable stuffing box bushings and die formed packing for sealing.

The casing is split horizontally so the pump can be opened and the rotating parts removed and replaced without disturbing the pipe connections. Two shaft and rotating parts assemblies cover all five pump sizes. Many of the parts in the new unit are interchangeable with the company's similar single stage pump. Rotating direction can be changed in the field by means of a locking shaft sleeve without additional parts.

If you write maker identify as IEN-13295

Counting - Electronic instrument employs four glow transfer tubes

Source: WESTPORT ELECTRIC
149 Lomita St., Dept. IEN, El Segundo, Calif.

For utility use

Model WE-110 is a new electronic frequency meter and counter that can be coupled directly to relatively insensitive transducers without using pre-amplifiers. The instrument applies with magnetic speed pick-ups to measure angular speed in rpm., with turbine type fuel flow transducers to read fuel consumed, with vibration pickups, of velocity or accelerometer type, to measure vibration frequency. It also applies with any audio oscillator for ten-fold increase in accuracy or as a time interval meter through the use of optional gate controlled jacks available at the rear panel.

Guarantee range is to 20,000 cps. with 50,000 cps. possible under restricted operating conditions. List price is $295. Dimensions are 11 by 6 by 6 inches. Operation is on 110-volt 60-cycle ac. Weight is 10 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13296

Here's breathing protection against nuisance exposure to
ORGANIC VAPORS and ACID GASES

IT'S THE NEW!

McDonald
GASFOE RESPIRATOR

★ Light . . . only 4 ounces complete!! So perfectly engineered for balance that only slight tension on headband provides an absolute seal with complete comfort. ★ No interference with vision or working freedom. ★ Every part replaceable.

Write for bulletin and prices

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN-13297

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

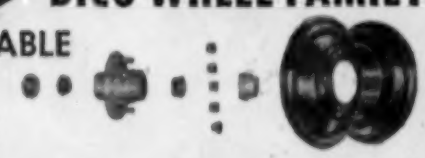
★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN-13298

It's A NEW ADDITION TO THE DICO WHEEL FAMILY

DEMOUNTABLE HUB WHEELS



For Trailers • Farm Equipment • Industrial Use

4.00 x 8
(16.28" outside rubber diameter)

(5) Bolt Hub with 4½", 4¾" and 5" bolt circles. The hub in this wheel will take various automotive type wheels having the above bolt circle requirements.

WIDE BASE

5.00 x 8 (16.4" outside rubber diam.)
5.50 x 8 (16.98" outside rubber diam.)

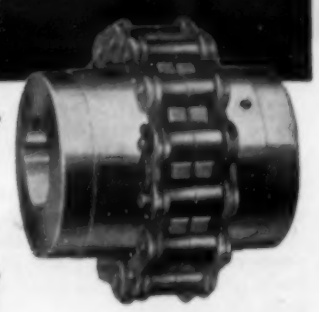
(5) Bolt Hub—4½" bolt circle. 4¼" wide base rims accommodate tires with greater air volume and heavier load capacity. Less air inflation gives greater shock absorption, assuring smoother, cushioned riding. Get all details NOW on the new DICO Demountable Hub Wheels.

DICO
WRITE FOR NEW DICO WHEEL CATALOG
DES MOINES 5, IOWA

If you write maker identify as IEN-13299

Only LINK-BELT "RC" Flexible Couplings give all 3 advantages at low cost

1 Equalized load
2 Proper balance at high speeds
3 Effective compensation for end float and misalignment



LINK-BELT
"RC" Flexible Couplings

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (S. Africa), Sydney (Australia). Sales Offices, Factory Branch Stores, Distributors in Principal Cities.

Link-Belt's exclusive design makes the difference. The simplicity of single-width chain is combined with divided rollers to give you top performance—plus economy. Specify Link-Belt Roller Chain Couplings for any rating from fractional to 1000 hp. Get all the facts from your Link-Belt representative or distributor, or write for Folder 2363.

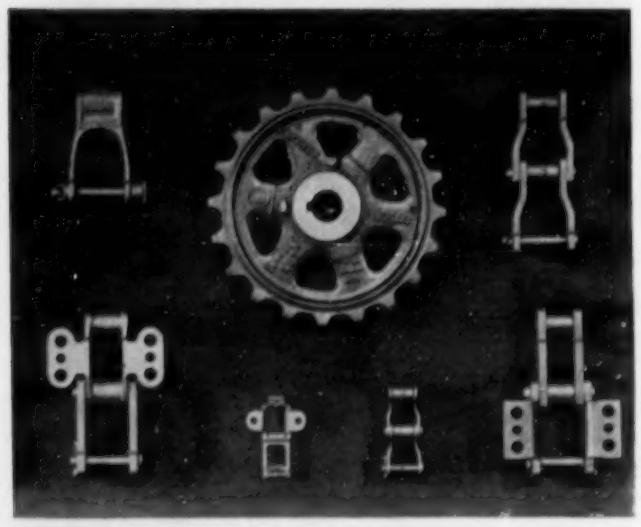
If you write maker identify as IEN-13300

Cambridge Surface Pyrometers are light weight, portable instruments—accurate but rugged—for measuring temperature of mold cavities and flat surfaces, still or moving rolls, and within-the-mass temperature of materials in a plastic or semi-plastic state. Write for Bulletin 194-SA; 33 illustrations, many applications.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal, New York 17
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

If you write maker identify as IEN-13301

CHAINS and SPROCKETS

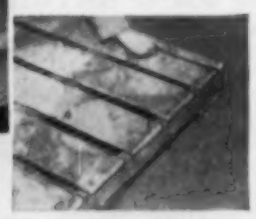


THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio
IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!
sales offices and distributors in principal cities

If you write maker identify as IEN-13302

Loose nails rip containers.

Split boards weaken pallets.

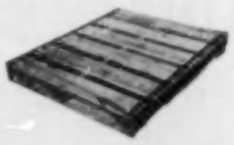


STOP DAMAGE to pallet loads and extend pallet life!

Signode Steel Strapping tensioned and stapled over the end boards on a pallet extends pallet life as much as three times. The strapping holds the end boards tightly to the runners, keeps pallets rigid, prevents nails from working loose, and reduces chances for damage to end boards by fork lift trucks.

Damage to bags and cartons strapped on pallets is virtually eliminated. Savings are so certain that *some large shippers strap all new pallets!* Write for factual data and free demonstration.

Pallet reinforced with Signode steel strapping.



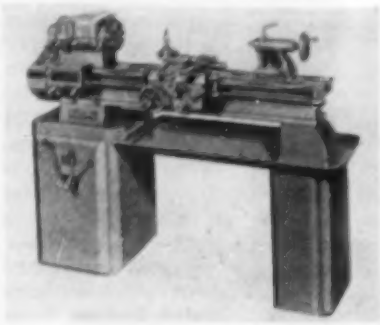
SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

SIGNODE THIS SEAL MEANS SECURITY IN SHIPPING

If you write maker identify as IEN-13303

Lathe - Pedestal mounting expressly for the company's 1955 line

Source: SHELDON MACHINE CO.
4258 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Complete data on request

A cast iron pedestal, beneath the headstock, encloses the motor and drive and one beneath the tailstock, provides storage space for tools and accessories in this new assembly of the company's 10, 11 and 13-in. lathes. A 13-in. unit, providing 34 in. between centers, is shown in the illustration.

Features bearing on the drive and lathe itself include double neoprene cog type V-belts to the spindle, a safety switch to prevent accidental closing or opening of the power circuit. Precision tapered roller bearings supporting the spindle with a single takeup for adjustment. A friction disc clutch engages longitudinal and cross power feeds. A built-in safety interlock prevents faulty feed engagement. A quick change gear box provides 54 changes in thread cutting.

If you write maker identify as IEN-13304

Compressor - Single and two stage, air cooled, displacement to 78 cfm.

Source: CURTIS PNEUMATIC MACHINERY DIVISION
1905 Kienlen Ave., Dept. IEN, St. Louis 20, Mo.

Catalog C-100

The company announces a new line of compressors to commemorate its 100th year in business. A typical unit in the line is illustrated. The compressor is available in single and twin-cylinder construction, for single and two-stage operation, in tank mounted or plain assembly, with ½ to 15-hp. motors. The two-stage assemblies are suited for operation to 200 pounds. Larger compressors, rating 50 to 300 cfm., also are available in the complete line.

If you write maker identify as IEN-13305

Kodak Tri-X is a new film, twice as fast as the company's Super-XX film. It will be available in 35 mm., 4 by 5 film pack and 620 and 120 roll film sizes. ASA daylight exposure index is 200 or better so the film can be used without supplementary flash or flood illumination for indoor snapshots by existing light. Exposures of night sporting events can be made without a flash and fast action pictures can be made outdoors on very dull days. Manufacturer is Eastman Kodak Co., 343 State St., Dept. IEN, Rochester 4, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13306

Is Space an Important Factor?

Then Use This Distinguished Line of Close-Coupled Pumps

These GMC Pumps are ideal for a multitude of jobs. Smooth and efficient whether vertical, horizontal, up-side-down or any inclination. Low first cost, low power and maintenance costs. Top quality "by Aurora."

Caps. 10 to 800 G.P.M.
Heads to 250 Ft.

Write TODAY for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES also BULLETIN 120

AURORA PUMP DIVISION
The New York Air Brake Company
52 Loucks Street Aurora, Illinois

If you write maker identify as IEN-13307

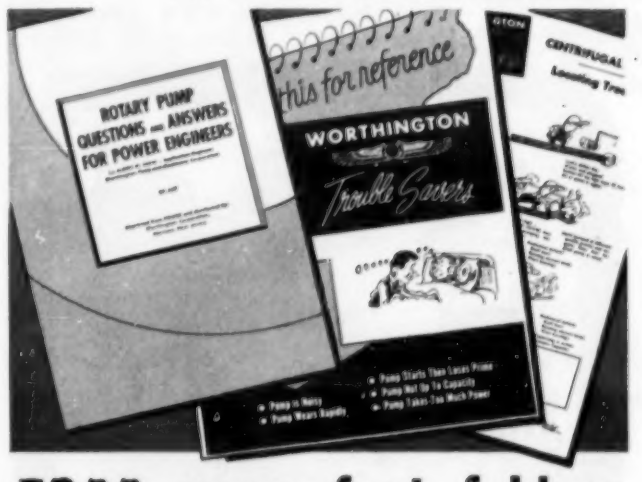
HOW TOOL CRIB CONTROL WILL CUT YOUR TOOL EXPENSE

12-page booklet tells how 20 plants stopped loss and theft of tools, reduced crib inventories, cut idle waiting time of men and machines, reduced breakage, stopped disputes—and more, too, with McCaskey Tool Crib Control. Reports show operating improvements and savings that can be made in your plant at a surprisingly small cost.

Write today for your copy of Booklet A-502 IEN and step-by-step procedure.

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as IEN-13308



FREE pump fact folders

Get the inside story about pumps — write for these brand-new fact folders.

They're chock-full of helpful information — pump terminology definitions, trouble-shooting methods, and preventative maintenance procedures.

Be sure to get your set today. Write to Worthington Corporation, Section PC.4.14, Harrison, N.J.

WORTHINGTON

If you write maker identify as IEN-13309

Call Your Nearest Representative for VIKING PUMP SALES and SERVICE

AMARILLO, TEXAS
Williams Bros. Co.
109 13 Houston St.
Phone 2-4311

ATLANTA (5)
C. W. Downing
1714 Spring St. N.W.
Phone Vernon 9065

BALTIMORE (5)
Walter H. Eagan Co., Inc.
237 President Street
Phone Lexington 9-1943

BIRMINGHAM 5
Pump Shop, Inc.
1015 7th Avenue So.
Phone 3-3206

BOISE
Olson Mfg. Co.
4000 Warm Springs Ave.
Phone 6377

(BOSTON SUBURB) SOMERVILLE 43, MASS. (5)
Hayes Pump & Mach. Co.
198 Vine Street
Phone Monument 6-3080

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214 Vine Street
Phone Main 3232

CLEVELAND 13
J. A. Linden
310 Marshall Bldg.
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Phone 3-2183
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Phone Harrison 8833

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E. E. Burton
4432 Long Beach Avenue
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Neill-Lovelle Supply Co.
505 W. Main Street
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Felker Bros. Mfg. Co.
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MEMPHIS 3 (5)
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MILWAUKEE 3
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Phone Broadway 6-0807

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1500 Hennepin Ave.
Phone Bridgeport 7582

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Phone Canal 4051

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Power Equipment Co.
Oliver Building
Phone Atlantic 0390

RICHMOND
O'Neill Pump & Engineering Co.
601 E. Franklin Street
Phone 7-4828

ST. LOUIS 1
Lane Machinery Co.
7th & Market Streets
Phone Central 1-0011

SALT LAKE CITY 1
Utility Engineers, Inc.
638 Deely Bldg.
Phone 3-4602

SAN FRANCISCO 5 (5)
DeLaval Pacific Co.
61 Beale Street
Phone Sutter 1-8846
Also Seattle and Portland

TULSA 3 (5)
Miller Equipment Co.
5004 E. 11th St.
Phone 9-6301

See Our Catalog in Sweet's

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 13310

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 13311

Precision

pins	dowels
blades	mandrels
points	shafts
pivots	studs
rollers	punches
awls	swagings, etc.

Torrington can make them *faster, better and for less* than you can yourself—in the temper, hardness, and micro-finish you want—to tolerances in tenths.

Send for our Condensed Catalog today. It shows many more parts that we can produce economically for you. And send us a sample part, a blueprint or a letter stating your needs. We're sure our quotation will be welcome news.

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 13313

Lubricating - Air line unit meters oil fog to pneumatic equipment

Source: C. A. NORGREN COMPANY
3432 S. Elati St., Dept. IEN, Englewood, Colo.

Folder 496

Micro-Fog trade names a new line of lubricators including twenty models in pipe sizes ranging from ¼ to 1 inch. Capacity is ½ pt., 1¾ gal. and 4½ gal. with flow range from 5 to 250 cfm. at 80 pounds.

The lubricator employs a transparent dome where the oil feed can be seen. An auxiliary air circuit controls this feed in a range between 1 drop in 20 min. to 15 drops per minute. There is no change in the feed action as the oil level recedes in the lubricator reservoir. The unit produces a fine oil fog that can be delivered over long distances for equal distribution to several outlets.

If you write maker identify as IEN - 13314

Milling - Spiral tooth cutter is made of tungsten high speed steel

Source: CLARKSON INCORPORATED
4004 E. 8-Mile Road, Dept. IEN, Detroit 34, Mich.

Details on request

Spiral cut teeth, in this new side and face cutter, are designed to provide high shear power. The tooth lip maintains the cutting angle after frequent grindings. Double back-off assures a strong tooth form. The cutter is available in a range of sizes and designs for specified application.

If you write maker identify as IEN - 13315

Conductor - Electric cable for cathodic corrosion protection

Source: ANACONDA WIRE & CABLE CO.
25 Broadway, Dept. IEN, New York 4, N. Y.

For equipment protection

Type CP designates a new insulated electric cable for direct burial to provide cathodic protection against corrosion of buried metallic structures. The cable employs polyethylene insulation and a red polyvinyl chloride jacket. It is a single-conductor assembly and is available in sizes from No. 8 to 4/0 with the 600-volt rating. Typical applications are in refineries and around tank farms, along buried pipe lines and in booster stations around steel substructures, as in chemical plants, power plants, substations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13316

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

Prompt Delivery from Your Supplier or Write Direct

W. E. BROWN CORPORATION • 2645 N. Normandy Avenue, Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 13317

For faster, lower cost assembly...

You'll get big savings on assembly operations with Stackbin Assembly Bins. Work station layouts are more efficient. Parts are kept close to worker's hands . . . reaching and fumbling is eliminated. Shallow angle lip is just right for finger tip control. Operators can select with both hands. Sloping bottom feeds parts continually toward the front. With adjustable hoppers, there are always plenty of parts when and where they're needed.

Stacking feature permits rigid setups, allows flexibility when layout is changed.

Stackbin Assembly Bins feature all-welded construction with smooth, folded edges. 6 sizes with straight or tapered sides. Also available with rear-loading feature.

WRITE TODAY for full information on the Stackbin System of economical materials handling and storage.

Stackbin Corporation, 1077 Main Street, Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN SYSTEM "Stacked and Still Accessible"

If you write maker identify as IEN - 13318

Linde synthetic sapphire

...for excellent optical transmission

PLUS physical strength and chemical inertness

Sapphire is hard, strong, chemically inert and transmits a high percentage of radiation in the important ultra-violet and infra-red regions. At 1750A forty per cent of the radiation is transmitted by a .059 inch section; at 5.7 microns forty per cent is transmitted by a .100 inch section. This unique combination of properties makes it ideal for optical systems that require resistance to abrasion and corrosion and high temperature strength as well as excellent optical transmission.

Now single-crystal sapphire windows are available in diameters up to 2 inches in several finishes. For further information, call or write your nearest LINDE office.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY
Division of Union Carbide Canada Limited, Toronto

"Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 13319

Peter A. FRASSE & Co., Inc.

announces the distribution of

REYNOLDS ALUMINUM

NOW—Frasse, as distributor for the Reynolds Metals Company, can furnish your aluminum requirements direct from warehouse stock.

Aluminum rods, bars, wire, sheets, plates, tubing and extruded shapes in a complete range of sizes and a wide variety of grades can now be supplied by Frasse . . . quickly and efficiently.

The same dependable service and technical assistance you have used in the past for carbon, alloy and stainless steels and tubing are available when your need is aluminum.

We will welcome the opportunity to be of service.

Peter A. FRASSE and Co., Inc.
17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as IEN-13320

REEVES *Fractional HP Vari-Speed Motodrive with* **10:1** *speed range. Completely new design! Check all these Reeves extras!*

1 Speeds from 3 to 4660 rpm. Speed ranges to 10:1.
2 New "all-position" 14-turn handwheel control.
3 New "full-vision," sealed speedial indicator.
4 New horizontal or vertical down output shaft.
5 New spiral groove lubrication.
6 112 different assemblies to choose from.

Send today for complete details and new catalog. Specify IN9b-M543.
REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN-13321

It's packed with ideas for product designers ... a completely new edition of the booklet

"APPLICATION IDEAS" by GAST

showing actual practical O.E.M. applications like this ...

For Gast rotary AIR MOTORS
... 1/20 to 4 h.p.
... 100 to 6,000 r.p.m.

COMPRESSORS
... up to 30 p.s.i.
... ½ to 24 c.f.m.

VACUUM PUMPS
... up to 28 in.
... ½ to 24 c.f.m.

Get Your Free Copy Now!

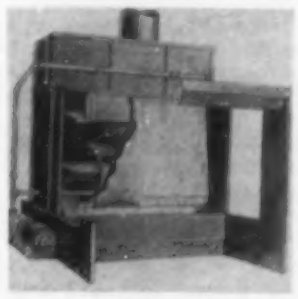
Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO 4 H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 139 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN-13324

Painting - Water wash booth removes paint over-spray from the air

Source: DESPATCH OVEN CO.
619 8th St. SE, Dept. IEN, Minneapolis 14, Minn.



Cleanaire design

Water is pumped from a settling chamber in the base of this new Cleanaire paint booth to a rectangular supply tank at the top of the water curtain wall from where it flows back to the tank in a uniform sheet. The water is pumped also to a pipe header carrying three rows of angularly positioned outlet ports to fill the space between two curved baffle plates at the bottom of the main curtain and behind it.

Over-spray that is not removed by the water curtain is caught in this spray filled area so only clean air can reach the exhaust blower serving the booth. Air passing through the blower will contain not more than 5 grains of solids per 1,000 cu. ft. of air handled and not more than 50 parts per 1,000,000 of solvent vapors based on a spray rate of approximately 3 gph. per ft. of booth length. The booth is made of 18 gage steel panels with reinforcing channel edges. It is available in specified sizes to meet requirements.

If you write maker identify as IEN-13325

Testing - Resistance meter checks insulation to 45,000 volts dc.

Source: ASSOCIATED RESEARCH INC.
3758 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.

Plant and field models

Wire and cable rated to 15,000 volts, rotating machinery, insulating materials can be checked with this new dc. Model 437 Hypot. It is equipped with two meters, one to read voltage and the other to read current, the former maximum at 15, 30 and 45 kv., the latter maximum at 50, 250 and 2,500 microamperes.

A voltage doubler circuit with metallic diodes takes the place of rectifier tubes and filament transformers. Diodes, filter capacitors, multipliers and transformer are oil immersed for corona-free operation. A primary circuit breaker with a secondary trip and a non-locking push button to energize high voltage are included.

If you write maker identify as IEN-13326

Grease, that will not melt under high temperature operation and that will stand up under rain, sleet, snow, can be made by dispersing a desired lubricating oil with a thickening agent known as Estersil GT, a laboratory developed derivative of silica. Several oil companies are now trial marketing greases made with this new thickener. It is a product of E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-13327

Stitch Metals

up to 5/16" thick in 1/5 second

shown here 3 times actual size

Bostitch Metal Stitching often cuts assembly time 50% to 90%. Stitcher punches its own hole, inserts staple and clinches it—all in ⅕ second. No holes to prepare. No pre-cleaning. And a Bostitch Metal Stitcher needs only a single, semi-skilled operator.

There's a Bostitch Metal Stitcher for just about any fabricating or fastening job — and a variety of types of stitches, too.

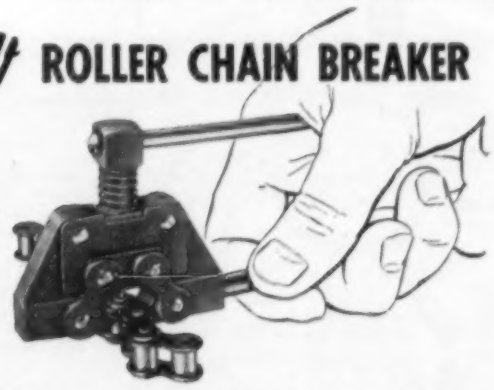
Fasten it better and faster with

Write for Bulletin 273
BOSTITCH, 652 Mechanic St.
Westerly, R. I.

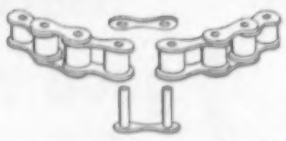
BOSTITCH
STAPLERS AND STAPLES

If you write maker identify as IEN-13328

New ROLLER CHAIN BREAKER



BREAK CHAIN IN SECONDS without damage to chain.



BREAKS ANY SIZE CHAIN No. 25 to No. 60.

BOSTON GEAR QUALITY THROUGHOUT Vital parts heat treated for wear-resistance and high strength.

AT YOUR BOSTON Gear DISTRIBUTOR Ask for new Chain Breaker folder. Explains simple operation.

Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON *Gear*
POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN-13322

Proven on Loads *UNDER* 600 Amps. **FUSETRON Dual-Element Fuses**

Have an Interrupting Rating in Excess of 100,000 Amps.

Recent tests verified by the Electrical Testing Laboratories of New York indicate that an interrupting rating of 100,000 amps. for FUSETRON fuses is a conservative one.

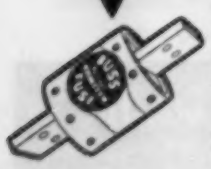
On the most severe available short circuit currents, FUSETRON fuses interrupted safely without igniting readily flamable material placed around the fuses . . . and there was comparatively little noise.

The time-lag characteristic of FUSETRON fuses has in no way been disturbed.

You get ALL THIS ADDED SAFETY without changing a panelboard or switch . . . PLUS the 10 Point Protection of FUSETRON dual-element FUSES — that permits you to load circuits to capacity; eliminates work stoppages caused by needless blows and reduces to a minimum the danger of damage to motors or equipment due to electrical faults.

Proven on Loads *ABOVE* 600 and up to 5,000 Amps. **BUSS Hi-Cap Fuses**

Have an Interrupting Rating in Excess of 100,000 Amps.



BUSS Hi-Cap fuses give protection against dangerous overloads as well as high fault current — yet their high speed operation on heavy shorts limits currents to safe values. When coordinated properly with FUSETRON fuses they will not open ahead of the fuse nearest to the fault.

For Maximum Safety and Convenience — install FUSETRON dual-element Fuses and BUSS Hi-Cap Fuses throughout the entire electrical system . . . Once properly installed, no costly inspection time or down-time is required for calibration and other maintenance necessary on mechanically operated devices.

Blowing time charts and more information are available. Write for bulletin FIS and HCS.

FUSETRON — TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION — BUSS

BUSSMANN MFG. CO. (Division of McGraw Electric Co.) University at Jefferson, St. Louis 7, Mo.

If you write maker identify as IEN-13329

WATER SCALE CONTROLLED ELECTRICALLY

With the AQUA Unit You Get Controlled Electrical Treatment with a Positive Power Supply

* * *

NOW in our 9th year

"Just plug it in."
No chemicals or "human watch dog" needed.

The AQUA unit provides a controlled electrical treatment using a positive power supply. It prevents hard scale formation through a *physical* change only. Usually, existing scale gradually disintegrates. AQUA is simple, durable and easy to install; costs about 15c per month to operate. Savings in cost of present treatment, SATISFACTORY OR NOT, WILL MORE THAN PAY FOR THE UNIT IN THE FIRST YEAR.

Ask on your letterhead for Bulletin "E-12". | *A few aggressive representatives are still wanted.*

AQUA ELECTRIC SCALE CONTROL, INC.
Plymouth Building • Cleveland 15, Ohio

If you write maker identify as IEN - 13330

NOW... for work levels up to 15 feet high

Ballymore all-welded-steel Safety-Step Ladders available from one to twelve steps. Over 100 models to choose from. Portable—they roll. Up to 9 steps, they automatically lock to floor when you step on—9 steps and over, they have step-on brake casters at front. Send for catalog. The Ballymore Company, Wayne 4, Pa.

Ballymore SAFETY LADDERS

Safety-Step LADDERS

If you write maker identify as IEN - 13331

Know the advantages PARTLOW INDICATING CONTROLS offer you

SEND FOR NEW CATALOG

COVERS ALL APPLICATIONS

SEND NOW for your copy of Partlow's new Condensed Catalog CC. See how the many Partlow Mercury Actuated Indicating Controls have been engineered with specific advantages for maximum efficiency in specific applications within -30°F to 1200°F range. One example is the versatile Model LSS — it does the job of two independent controls and may be used for four specific heating or cooling control systems. In addition to special application features like this, Partlow offers you *all* these quality advantages on *all* controls:

1. **DIRECT-ACTING** hermetically sealed Mercury Bulb instrumentation. Positive, precise, sensitive — never temperamental.
2. **INTERCHANGEABLE ELEMENTS** — for quick, easy field replacement, without returning control to factory.
3. **ACCURATE CALIBRATION** — conservatively, within 1% of scale range.
4. **LONG LIFE** — thick-walled capillaries and seamless tubing assure almost indefinite life.
5. **LOW MAINTENANCE** — few moving parts — no need for compensators.

partlow

the pioneer in mercury thermal controls

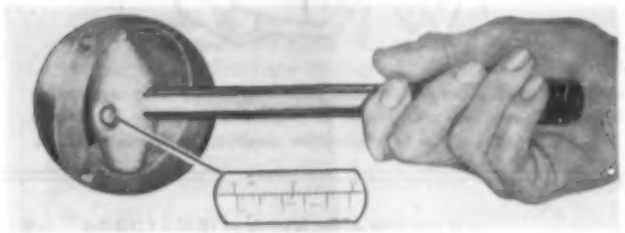
Offices in All Principal Cities

THE PARTLOW CORP., NEW HARTFORD, N. Y.

If you write maker identify as IEN - 13333

Gage - Internal micrometer provides reading on vernier scale

Source: McGLYNN HAYS INDUSTRIES
71 Rutgers St., Dept. IEN, Belleville 9, N. J.



Makes two-point contact in a bore

Spring backed anvil, in the head of this new Opti-Mike gage, connects to a vernier scale that is visible through an eye piece in the head of the instrument. The head is inserted into a bore and is rocked to compress the anvil against the spring action to the bore diameter. A wedge holds it at this point and the gage is withdrawn and read through the eye piece in the head. Readings are direct to 0.00025 inch. The instrument is available to cover a range from 0.8 to 6 in. in bore diameter. Pressing a button, after the reading has been taken, releases the anvil and sets the gage for the next reading.

If you write maker identify as IEN - 13334

Adhesive - Liquid material bonds without pressure, dries quickly

Source: MIDCONTINENT ADHESIVE CO.
Dept. IEN, Grove City, Ohio

Packaged in gallon cans

Roltite trade names a new contact type adhesive for fast permanent bonding of plastic laminates, aluminum, steel, copper, plywood, wood veneer, Masonite, Novoply, rubber, leather, masonry, to themselves and to each other. The material is particularly suited for continuous setup production runs. It will dry within 3 min. in an oven. Bonding is instantaneous without clamping.

If you write maker identify as IEN - 13335

Magnet - Base and column assembly positions gage at a machine or bench

Source: du MONT CORPORATION
du Mont St., Dept. IEN, Greenfield, Mass.

Brass column

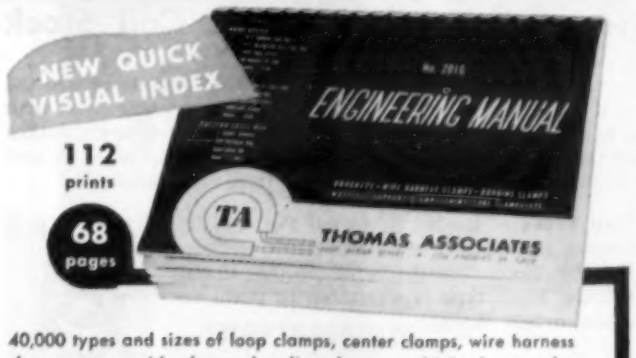
Universal joint has been added to the column in the company's magnetic base gage holder, previously described IEN-3357-50. The joint permits swiveling the outer section of the column in a vertical plane and also horizontally. The ball and socket unit is released and locked by turning a knurled nut. The column fits into any of three positioning holes in the base which is ground square and magnetized on all four sides.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13336

Send for Your Copy of This New

ENGINEERING MANUAL



40,000 types and sizes of loop clamps, center clamps, wire harness clamps, wave guide clamps, bonding clamps, multiple clamps, *plus* blocks, brackets, busbars, line supports, shims and related items.

Save design, tool and production time and expense with TA Standards. Clamp sizes range from miniatures of ⅛" on up to 6" diameter in 1/16ths for bolt mountings from #4 to ⅜". Available in aluminum, steel and stainless steel. New 2-page chart tabulates design data on a wide variety of cushioning or insulating materials for service from—130°F to +1200°F. New Engineering Manual *shows all*, lists 24 new items. For your free copy write Thomas Associates, 4607 Alger Street, Los Angeles 39, California.

THOMAS ASSOCIATES
Los Angeles, Calif. • Coffeyville, Kans. • Hagerstown, Md.

Reg. U.S. Pat. Off. *Engineering Service Offices in 12 principal areas*

If you write maker identify as IEN - 13337

Some COMPOUND MELTING TANKS by Sta-Warm are... tailor made

● If your plant has a compound melting and dispensing operation that is not operating efficiently, you may require a tailor-made unit in order that it will fit into your production schedule. Sta-Warm engineered compound melters "fit"... Sta-Warm engineers see to that.

The Sta-Warm Method includes consultation and analysis before designing and manufacturing. Then, if a "standard" model of melter cannot give you the desired results, a tailor-made melter will be recommended.

At every step of the way, you are the "boss", you determine end results, with Sta-Warm's long experienced engineering department making suggestions that will fit your need.

Why not get acquainted with Sta-Warm today? Outline your problem in a letter and get the benefit of their advice, without obligation.

One of many styles of Sta-Warm compound melters and dispensers. There's one for your job.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 13338

NOW... A New Cleaner to DO MORE JOBS... BETTER the IDEAL Commercial Cleaner

for Wet or Dry Pick-Up

- Light Weight—1½ H.P.
- Tremendous Suction
- Tip-Proof—Quiet
- Easy to Handle—Foot Switch Control

*SOLD THROUGH LEADING DISTRIBUTORS

Now — an all-new vacuum cleaner that's easier to use. Moves and turns with finger-tip ease on four large, swivel casters. Foot switch gives instant on-off control. Efficient air-filter system eliminates external bag. Water and heavier particles are deposited in rust-resistant tank, dust is held in cloth filter bag. Motor is mounted at bottom for maximum stability and protection. Undercoating and insulation reduce noise. Weighs only 72 lbs., is only 22" in diameter for easy handling. Complete range of attachments.

MAIL FOR FULL DETAILS

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Ill.
Please send full catalog data on new IDEAL "Commercial" Cleaners.

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 13339

FASTER HEAT TRANSFER for 50% of the COST with PLATECOILS

(REPLACE PIPE COILS)

A Platecoil has more heat transfer area than a pipe coil twice its size. Thus it takes only half as much Platecoil to heat a given area. You have 50% less steel to pay for so you can save nearly 50% in initial cost. The Platecoil takes only half as much space in the tank. The greater BTU transfer per unit area of Platecoil also means faster heating or cooling. Platecoils require less maintenance and can be removed without dumping the solution.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division
Tranter Mfg. Inc.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 13340

Investigate JOHNSON POWDERED IRON BEARINGS AND PARTS

Low cost, no machining and ferrous properties make Johnson powdered iron parts important for many applications. Johnson has just added this line to its well-known Ledaloyl (powdered bronze) products. Our engineers will gladly consult with you on the application of Johnson powdered iron. Write for information.

JOHNSON BRONZE CO.
476 S. Mill St., New Castle, Pa.

JOHNSON BEARINGS
Sleeve-Type

If you write maker identify as IEN - 13341

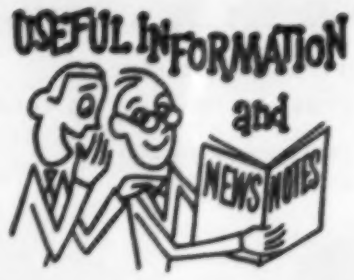
MECHANIZE 4 Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!

This single unit, *Finnell's 213P* for large-area floors, *completely mechanizes scrubbing.* Applies the cleanser, scrubs, flushes, and picks up—*all in one operation!* No switches to set for *fast* or *slow. Self-propelled* ... 26" brush spread. *Finnell* makes a full range of sizes... available on lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2612 East St., Elkhart, Ind.

● Cleans up to 8,750 sq. ft. per hour!

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
FINNELL
BRANCHES IN ALL PRINCIPAL CITIES



The following descriptions are published with the understanding that the material is available on request without charge. We do not forward inquiries for description specifying letterhead request.

If you write maker identify as IEN - 13344

Alloys—Booklet describes use of low-melting alloys in making foundry patterns

Making master patterns direct from routed wood molds, anchoring patterns in matchplates, metallizing wood patterns and core boxes, salvaging worn core boxes, are among the applications described in revised 12-page Bulletin F-6. Title is "Cerro Alloys in Foundry and Pattern Shop." These uses are based on the company's bismuth-lead alloys that melt at 138 to 302 deg. F. Suppliers are named for the equipment mentioned. Cerro de Pasco Corp., 40 Wall St., Dept. IEN, New York 5, N. Y.

If you write maker identify as IEN - 13345

Batteries—Suggestions on maintenance of industrial storage batteries in pocket booklet

"7 Rules" is new 12-page booklet of seven specific suggestions on storage battery care and handling. Each suggestion is in the form of a concise statement, together with the reason for the procedure and what to do about possible trouble. The final suggestion is to keep a continuous written record of each battery. This is illustrated by two sample charts, one for day-to-day operation, the other for hydrometer readings at four-month intervals. Electric Storage Battery Co., Exide Industrial Div., 42 S. 15th St., Dept. IEN, Philadelphia 2, Pa.

If you write maker identify as IEN - 13346

Castings—In stainless alloys, house paper tells about design and production

"Newscast" in its 16-page October issue contains a number of articles to bring you up to date on developments in cast stainless alloys. One tells about two new alloys. Another shows how to design for sound castings in stainless steel. A third is on factors for designing cast-weld construction. A fourth provides a review on shell-molding practice. Your name will be added to the list to receive this and future issues. Cooper Alloy Corp., 212 Bloy St., Dept. IEN, Hillside 5, N. J.

If you write maker identify as IEN - 13347

Chemicals—Forty-six new products included in data on synthetic organic chemicals

1955 Edition is announced for the company's booklet on synthetic organic chemicals and their physical properties. The 24-page publication, Booklet F-6136H, lists the chemicals by related groups, tabulates their properties, gives condensed application notes. The groups include alcohols, glycols, esters, plasticizers, ketones, ethers, aldehydes. Carbide & Carbon Chemicals Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13348

DERBY "152"

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

MOST TALKED ABOUT GUMMED TAPE DISPENSER ON THE MARKET!

Derby spent 2 years designing, building and testing the fabulous Super "152". It's a rugged, efficient, gummed tape dispenser with so many big machine features, so many unusual Derby exclusives, that its low price is truly sensational! Dispenses 1" to 3" width tapes in predetermined lengths up to 30".

See your dealer or write Dept. IF

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 13349

nothing succeeds like...

PROMPT SHIPMENT
from 500,000 screws in bulk 300,000 gross packaged stock.

FREE LUBRICATION
Screws in bulk lubricated free upon request.

SECURE PACKING
in containers specially built and sealed against loss in shipment.

Southern means one source for all your wood screw needs—and Quality in every screw!

PHILLIPS or SLOTTED • FLAT • ROUND • OVAL • STEEL
BRASS • SILICON BRONZE • ALUMINUM • STAINLESS STEEL

Write Us Your Requirements • Samples Upon Request • Box 1360-E

SOUTHERN SCREW COMPANY
STATESVILLE, N. C. • WOOD SCREWS • STOVE BOLTS
DRIVE SCREWS • TAPPING SCREWS • HANGER BOLTS

Factory Warehouses:
North Bergen, N. J. • Chicago, Ill. • Los Angeles, Cal. • Dallas, Texas

If you write maker identify as IEN - 13342

Producers Pare Stamping Costs

Modern Coil Handling Equipment Widens Use of Low Cost Coil Stock

The battle to keep down costs is going well for producers of stampings. Coil stock and modern coil handling equipment are the decisive factors. Coil stock, with only two scrap ends to its entire length is far more economical than strips of straight stock with two scrap ends to every ten feet. Moreover, the type of coil loading and handling equipment built by F. J. Littell Machine Co. makes coil stock easier to handle than straight stock. Stamping producers are taking full advantage of these developments. Coil stock and Littell Coil Hooks, Reels, Straightening Machines and Automatic Roll Feeds are in wider use today than ever before.

Hooks Serve Two Ways . . . Littell Hooks make it a simple matter to unload coils on delivery, and to load reels. The variety of sizes have lifting capacities from 1,000 to 40,000 pounds.

Two Types of Reels . . . Littell Coil Cradle Reels mount heavy coils, up to 30,000 pounds. Spindle Reels handle coils up to 40,000 pounds. Each type is available in plain or motor driven designs.

Straighteners Flatten Stock . . . Removing curvature from coil stock as it passes from reel to punch press die is the function of Littell Straightening Machines. All models are the same basic design. Variation is in the number and diameter of straightening rollers employed . . . from 1" to 90" in width, and from .010" to .125" thickness.

Automatic Roll Feeds . . . Press output in many shops has been multiplied five times by simply attaching Littell Roll Feeds to presses for blanking, drawing, piercing, or cut-off work. The Littell Roll Feed is used with compound dies, single station dies, and progressive dies. Standard models are easily attached, serve all types of presses, and handle all standard widths and thicknesses of stock.

Descriptive details and prices on Littell Hooks, Reels, Straighteners and Roll Feeds are available on request. Inquiries are given immediate attention when addressed to

F. J. Littell Machine Co.
4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 13350

Extend the Life of Slings with Safe
NEWCO SLING SADDLES

Will not lessen the recommended strength of Slings by the cutting of strands of wire rope.

Protects the body of the Sling. Strand cutting around 90° edges is eliminated.

Can quickly be changed from one Sling to another of comparable size rope.

Moved or adjusted easily by hand for various size loads.

Gives more bearing area — eliminating rejected material.

Material — Manganese Bronze Alloy 110,000 P. S. I.

Manufacturers of Newco Wire Rope Clamp and Thimble—Bridles—Saddles.

Get the facts—write for complete information.

NEWMAN MANUFACTURING & SALES CO., INC.
Dept. 101, Box 5939, Kansas City 11, Mo.

If you write maker identify as **IEN - 13351**

If you write maker identify as **IEN - 13352**

OHMITE®

CORRIB® Resistors

90 to 1500-Watt Sizes in Fixed, Tapped and Adjustable Types

Is heat dissipation a problem in your heavy-duty, resistor applications? If so, Ohmite's specialized line of Corrib resistors may be your solution. They consist of a corrugated metal ribbon, carefully space-wound (edgewise) on a strong ceramic core and locked securely in place by special Ohmite vitreous enamel. The resulting unit dissipates heat efficiently, and gives long, trouble-free operation, under intermittent or continuous use.

Corrib resistors are made to order in resistance values from .04 to 70 ohms. Core sizes range from 9/16" dia. by 4" long to 2½" dia. by 20" long.

Write on Company Letterhead for Catalog and Engineering Manual No. 40

OHMITE MANUFACTURING CO.
3619 Howard St., Skokie, Ill.
(Suburb of Chicago)

Be Right with **OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

USEFUL INFORMATION —*Continued*

If you write maker identify as **IEN - 13354**

Conveyor Belts—Two-page color chart on strength ratings for eight conveyor belts

Five strength ratings are shown graphically for each of eight ply and material combinations in new Bulletin 1554 on conveyor belts. These are theoretical ultimate, actual ultimate, fastener strength, operating strength with fasteners, operating strength with splice. Also shown is the troughing index force. Each figure is in contrasting color so the belts can be compared readily. Ratings are in pounds per inch of width to assist in calculation. Quaker Rubber Corp., Div. H. K. Porter Co., Comly & Tacony Sts., Dept. IEN, Philadelphia 24, Pa.

If you write maker identify as **IEN - 13355**

Abrasive Cutting★—Booklet answers question, why do abrasive cut-off wheels fail—sometimes?

Three principal reasons are described in detail by new 40-page booklet, "Why Do Abrasive Cut-Off Wheels Fail? (sometimes)". They are machine shortcomings, fixture failures, wheel troubles. The booklet starts with a description on how abrasive saws work, tells about safe speeds and relative speeds, what a bent shaft will cause, why bearings wear out, power required, types of work-holding devices, how to care for wheels. ★Your company letterhead required to obtain this literature. The manufacturer will service direct inquiries only. Wallace Tube Co., 1304 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

If you write maker identify as **IEN - 13356**

Power Cylinders—Data sheets by ASTE on pneumatic cylinders by 12 manufacturers

Data package is being made available by the American Society of Tool Engineers on 12 leading makes of air cylinders. It consists of 19 sheets, punched for a standard three-ring binder, primarily on dimensional drawings and tables. Four of the sheets are JIC pneumatic standards and a glossary. American Society of Tool Engineers, 10700 Puritan Ave., Dept. IEN, Detroit 38, Mich.

If you write maker identify as **IEN - 13357**

Die Castings—Information booklet on the die casting process, metals, applications

Points to watch for in design of parts for die casting, how hot-chamber and cold-chamber machines work, composition and properties of die-casting alloys, machining and finishing, are topics in new 28-page "Die Casting" booklet. The alloys include zinc, aluminum, magnesium, copper. American Zinc Institute Inc., 60 E 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 13358**

Fabricating—Booklet describes methods of making metal parts by aircraft techniques

"Making chips" is minimized by the four metal-working methods described in new 28-page booklet, "Engineering Designs for Optimum Structures", produced by the company's Aeronautical Division. These methods are contour rolling, forging and forming, finish welding, fusion welding. A. O. Smith Corp., Box 584, Dept. IEN, Milwaukee 1, Wis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13359**

SURFINDICATOR* HELPS REDUCE MACHINING COSTS

Expensive overfinishing of machined parts can be eliminated with the Brush SURFINDICATOR. This practical shop instrument permits quick measurement of surface roughness. Simple to operate, portable, can save its cost a hundred times over. Write for booklet "Surface Finish Control". Brush Electronics Company, Dept. II-12, 3405 Perkins Avenue, Cleveland 14, Ohio.
*Trade-Mark

BRUSH ELECTRONICS COMPANY
INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT
formerly The Brush Development Co. Brush Electronics Company is an operating unit of Clevite Corporation.

If you write maker identify as **IEN - 13360**

Two capacities:
2400 lbs. D.B.P.
3000 lbs. D.B.P.

Users of the new Mercury Banty Model 460 Tractor now have the choice of either Regular or LP GAS Operation! LP GAS fuel operation saves you as much as 50% on fuel costs . . . reduces engine maintenance . . . eliminates obnoxious exhaust fumes . . . gives maximum power and economy . . . provides safer and more efficient operation. Fuel tank is demountable—takes only minutes to change.

For complete information write:

MERCURY
FORK TRUCKS TRACTORS TRAILERS

MERCURY MANUFACTURING COMPANY
4132 SOUTH HALSTED ST.
CHICAGO 9, ILL.

If you write maker identify as **IEN - 13361**

If you write maker identify as **IEN - 13362**

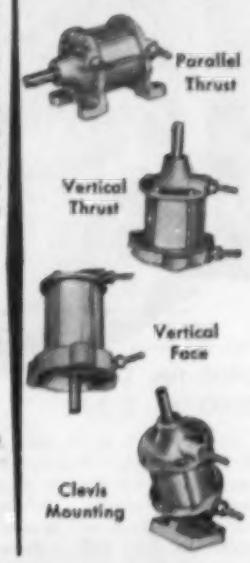
If you write maker identify as IEN - 13363

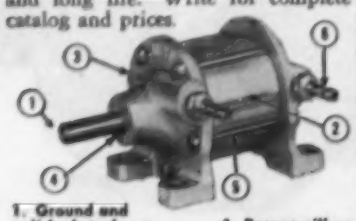
AIR-MITE AIR CYLINDERS

Low Cost Compact Powerful Rugged

AIR-MITE Cylinders—made in single or double acting series—in 4 mounting types, are high quality cylinders at a low price. Simple, rugged design and compact construction give them long life, permit easy mounting on jigs, fixtures, tools, or machines. Used wherever power holding, pushing, pulling or lifting is required, AIR-MITE cylinders will meet your most exacting standards of dependability and long life. Write for complete catalog and prices.

4 Mounting Types



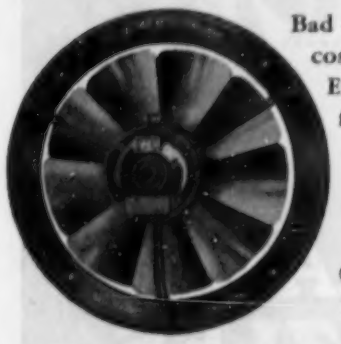


1. Ground and polished steel ram
2. Brass, true-bore cylinders
3. High strength aluminum alloy cylinder heads
4. Bronze oilless ram bushing
5. Five steel tie rods
6. Brass hose stems

AIR-MITE Devices, Inc.
4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 13364

CUT COSTS
WITH EMERSON-ELECTRIC EXHAUST FANS



Bad air is expensive! Cut this cost with Emerson-Electric Exhaust Fans . . . designed for air-moving jobs in commercial, industrial and institutional buildings. Belt- and direct-drive models. Capacities up to 19,350 c.f.m.

Get ventilation planning data and specifications by writing for Bulletin No. 806.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 13365

If you have a labeling problem ordinary labels can't solve...use

AVERY Kum-Kleen self-adhesive LABELS

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!

faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers. Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

USEFUL INFORMATION —Continued

If you write maker identify as IEN - 13366

Gages—Use them to save trouble in production work, urges booklet for management

What actually happens when production parts deviate from dimensional standards, and their effect upon subsequent operations, are described in detail by new 16-page booklet, "A Management Blind Spot". The title refers to the undersize and oversize pieces, scrap and salvage, rework and secondary operations which the booklet estimates may be 5 to 30 per cent of production. How adequate gage equipment can stop trouble at its source is a concluding section. Federal Products Corp., 1144 Eddy St., Dept. IEN, Providence 1, R. I.

If you write maker identify as IEN - 13367

Gages—Catalog contains tables of wear allowances and tolerances on gages

"Hemco Tools", new 30-page catalog, deals with plug, ring, thread and pipe-thread gages. Most of it concerns descriptions and list prices for standard units. In addition there is a chart and table of wear allowances and tolerances, tables of AGDS standard gage sizes and tolerances, a section on how to measure threads by means of precision wires, and a decimal equivalent table. H. E. Morse Co., Dept. IEN, Holland, Mich.

If you write maker identify as IEN - 13368

Heating—How to install unit heaters, bulletin tells about piping, trapping, venting

Diagrams in new 8-page Bulletin 15 show how to make pipe connections for steam and hot-water unit heaters. They cover low and elevated-pressure steam supply, propeller and blower-type units, horizontal and vertical-discharge units. They also show how to make supply and return connections to mains, where to locate traps, strainers, valves, vents. Industrial Unit Heater Assn., Guardian Bldg., Dept. IEN, Detroit 26, Mich.

If you write maker identify as IEN - 13369

Lighting—Slide calculator assists in solving room illumination problems

"Light Rule" is new 9½ by 3¼-in. slide calculator available to individuals responsible for lighting. One side enables you to determine the coefficient of utilization by room size, type of incandescent or fluorescent fixture, mounting height. The other side is then employed to determine necessary number of lamps for the desired light intensity. Or if the fixture spacing is known and illumination level is stated, you can determine number of lumens per fixture required. Champion Lamp Works, Dept. IEN, Lynn, Mass.

If you write maker identify as IEN - 13370

Machining—By electrical discharge is detailed by new information file folder

Disintegration of a metallic or other electrically-conductive material by an electrical discharge is employed by company's equipment to drill, broach, ream, die-sink or grind. How the process works, application examples, types of finish produced, cost analyses of difficult machining work, are described in an Engineering Data File available on request. Additional sheets are supplied from time to time. Elox Corporation of Michigan, 710 N. Rochester Road, Dept. IEN, Clawson, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13371

FASTER, MORE ACCURATE INSPECTION WITH

FLASH-O-LENS Illuminated Magnifiers

In industrial inspection departments, on production lines, in foundries and laboratories, wherever close visual inspection is important, FLASH-O-LENS gets the job done better, faster. FLASH-O-LENS spots minute defects by spotlighting the area it magnifies.

Battery models, powered by standard flashlight cells, and AC-DC plug-in models are available with 5, 7, 20 or 40 power precision lenses to meet a wide range of inspection needs. Prices start from $10.95.

PIKE REG. U. S. PAT. OFF.

WRITE TODAY for literature showing applications, types, prices.

E. W. PIKE & COMPANY, Inc.
492 NORTH AVENUE ELIZABETH 3, N. J.

If you write maker identify as IEN - 13372

BULKY, AWKWARD, HEAVY LOADS
Handled
- EASILY
- SAFELY
- QUICKLY

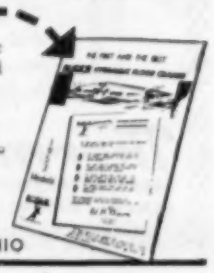
for LESS

2 TON CAPACITY

SUBSTITUTE FOR AN ELEPHANT ®

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.



RUGER CRANES

613 West Fourth St UHRICHSVILLE, OHIO

If you write maker identify as IEN - 13373

WHITNEY-JENSEN
METAL WORKING TOOLS
FOR 43 YEARS

NO. 455 ANGLE IRON COMBINATION

An unusually strong and compact unit for shearing, notching, and bending angle iron. Adaptable for on-the-job work or permanent mounting in the shop. Floor space required — 21-1/2" x 26". Capacity — all sizes angle iron up to and including 2" x 2" x 1/4". *Write for our new Complete Catalog.*

WHITNEY METAL TOOL COMPANY • 228 FORBES ST., ROCKFORD, ILL

If you write maker identify as IEN - 13374

HOW TO USE DRY TYPE TRANSFORMERS PROFITABLY IN YOUR PLANT

Planning the electrical system of your plant with Acme Electric dry type transformers can save you money, material and time. How to eliminate double wiring, provide 3-wire secondary circuits, insulate circuits or balance voltage are only a few of the many ways you can use Acme Electric dry type transformers. Write for the folder DT 195 containing ideas and wiring diagrams. Acme Electric transformers are available in single phase sizes from 1/10 thru 500 KVA; three phase from 3 thru 750 KVA.

ACME ELECTRIC CORPORATION
MAIN PLANT: 2612 WATER STREET • CUBA, N. Y.

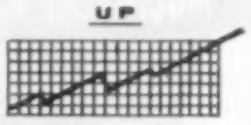
West Coast Engineering Laboratories:
1375 W. Jefferson Blvd., Los Angeles, Cal.
In Canada: Acme Electric Corp. Ltd. • 50 North Line Rd. • Toronto, Ont.

Acme ACME Electric TRANSFORMERS

If you write maker identify as IEN - 13375

TO KEEP COSTS DOWN

KEEP PRODUCTION UP



WITH MANZEL FORCE FEED LUBRICATION

Pressure Application—Exact Amounts—Accurately Timed

Manzel Force Feed Lubricators insure efficient machinery operation by lubricating automatically. No stops for hand oiling — or because of breakdowns caused by faulty lubrication. They quickly pay for themselves through

savings in down time, labor and lubricants.

These sturdy, dependable lubricators can be installed on new or existing equipment. Write for details.

Manzel — DIVISION of FRONTIER INDUSTRIES, Inc. 242 BABCOCK ST., BUFFALO 10, N. Y.

If you write maker identify as IEN - 13376

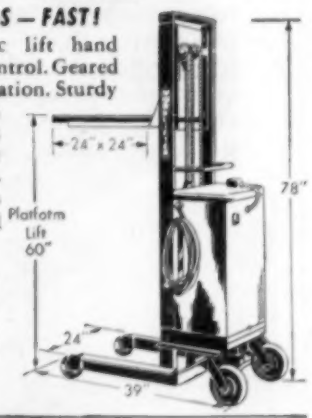
ECONOMY LIFTERS

Sturdy Structural Steel Frame Engineered for Extra Stability and Strength

WORKLIFTER

STACKS 1000 LB. LOADS — FAST!

Battery powered, hydraulic lift hand truck. Push button remote control. Geared pump for smooth, quiet operation. Sturdy structural steel frame. 12 volts (two six volt batteries) lifts loads fast. Built-in, 8 amp/hr battery charger. Power shut-off to prevent excessive overload. Roller bearing, solid hard rubber wheels.



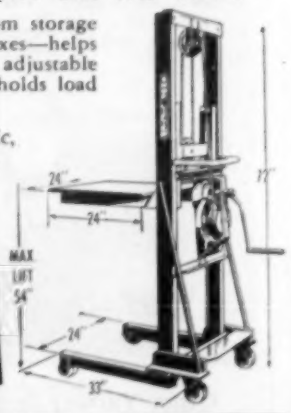
Standard models priced from **$695.00.** Special models, for handling pallets, drums, and many other special applications.

SHOPLIFTER

LIFTS-MOVES-SEPARATES HEAVY DIES AND MOLDS

Safely handles heavy dies from storage rack to press—lifts barrels, boxes—helps load trucks—or as a handy adjustable shop table. Automatic brake holds load at any height.

Four models, hand and electric, priced from **$183.60** and up. Capacities 500 lbs. to 2000 lbs.



Write for new Catalog No. 54. Contains complete information on all models of Shoplifters, Worklifters, and elevating tables.

ELEVATING TABLE

ADJUSTABLE HEIGHT — 2000 LBS. CAPACITY

For feeding sheet stock, supporting fabricated frames, handling heavy dies or as a portable work bench.

Self-locking worm and screw elevating mechanism holds work at any height without danger of falling.

Table dimensions 24" x 36". Height adjustable between 24" minimum and 42" maximum. Foot operated floor lock holds table stationary when not in use.

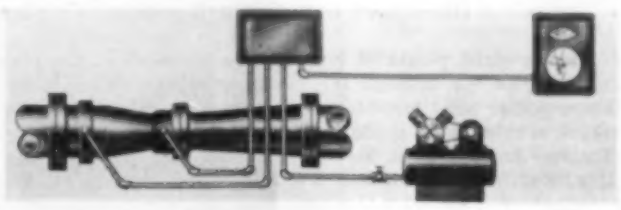
Price $210.80 f.o.b. Chicago
Service representatives in all industrial areas.

ECONOMY ENGINEERING CO., 4502 W. Lake St. Chicago 24, Ill.
ESTABLISHED 1901

If you write maker identify as IEN - 13378

Gage - Pneumatic equipment to read liquid level or rate of flow

Source: SIMPLEX VALVE & METER CO.
6717 Upland St., Dept. IEN, Philadelphia 42, Pa.



Line diagrams upon request

Laminair trade names a new form of pneumatic transmission equipment to balance a single air pressure against a differential pressure produced by a venturi tube, flow nozzle, orifice plate or the difference between two existing levels or pressures. The resulting output pressure is carried by tube to a remote instrument that indicates or records change.

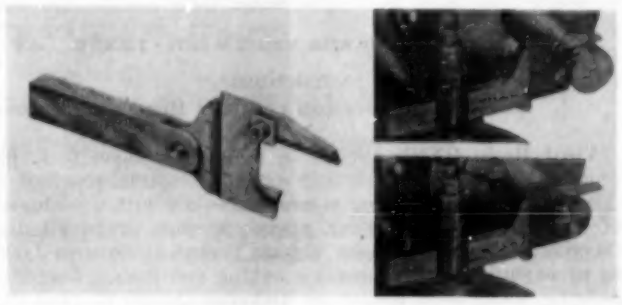
The equipment consists of a differential converter enclosed in a rectangular housing and connected by four lines. Two lines lead from the high and low sides of the actuating element. One leads from a small motor driven compressor which operates as the source of the single air pressure. The fourth leads from the converter to the recorder.

Increased loading, due to greater fluid flow, results in increased pressure output to the recording instrument. Decrease in pressure acts in the opposite direction. The gage is capable of measuring down to 15 per cent of a maximum predetermined flow with an average error within 3 per cent at any point over the range.

If you write maker identify as IEN - 13379

Lathe Tool - For smooth cut-off in work measuring to 2 in. in diameter

Source: H. D. HERDER TOOL SPECIALTIES
2424 Brook Drive, Dept. IEN, Kalamazoo, Mich.



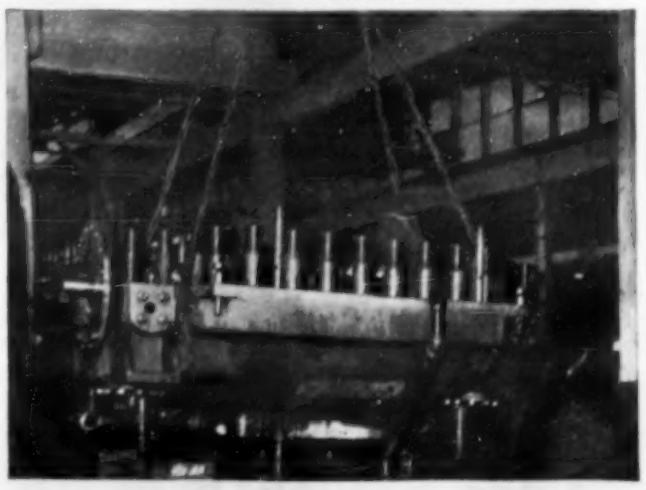
Adjusts for work diameter

Smooth action, free from chatter or danger of hogging, characterizes this new "No Hogging" cut-off tool. It consists of a high speed steel blade, a spring loaded blade holder and a steel shank. The blade holder arm rides on top of the work so the tool acts as its own follower rest with its cutting face maintained at the work center.

The blade measures 2 by 1¼ by $\frac{1}{16}$ in. and is ground ready to use. The blade holder is case hardened cold rolled steel. The shank measures ⅝ by ¾ by 3⅞ inches. It also is case hardened cold rolled steel. The tool, with a blade and wrench, lists at $9.50. Additional cut-off blades list at $2.75. Northrup No. 2000 is the designation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13380



WICKWIRE SLINGS

with complete line of fittings

Wickwire Rope slings are offered in both braided and single-part construction; available with a complete line of fittings to meet all types of service requirements. For detailed information write to Wire Rope Sales Office, Palmer, Mass.

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 13381

UDYLITE DROP-IN RUBBER LININGS for 55 gallon drums

Make convenient temporary storage for your acid or alkaline solutions.

If you have need for a quick emergency storage tank for your acid or alkaline solutions, Udylite drop-in rubber linings are your answer.

This inexpensive acid resistant rubber lining will convert an empty 55 gallon drum quickly for your emergency storage of acid or alkaline solutions.

All that is necessary is to drop the rubber lining into a 55 gallon drum and you have an extra rubber lined storage tank.

This rubber lining is 22 inches in diameter, 40 inches deep with a .050 inch wall, and will fit snugly into a 55 gallon drum, held in position by an overlapping lip.

Recommended for sulphuric, oxalic, phosphoric, muriatic and diluted hydrofluoric acids, as well as alkaline and acid solution, for brass, cadmium, silver, tin, zinc, gold, nickel and copper.

Order a supply now for only $19.75 each, f.o.b. Detroit. Immediate shipment from stock. Write to—

WORLD'S LARGEST PLATING SUPPLIER

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

If you write maker identify as IEN - 13382

HIGHER SPEEDS! FASTER GRINDING!

kipp AIR GRINDERS

MODEL JA
50,000 R.P.M.
$42.00 IN U.S.A.

Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

The RPM's stay up while grinding...not only when the grinder runs idle. That means better work—longer wheel life.

High speed grinding with small wheels was a Madison-Kipp development of the late twenties. It was born out of a pressing need in our tool room. Because tool room grinding problems are universal, we believe it will pay you to utilize Kipp grinders in your tool room as generally as we do in our own.

kipp

MADISON-KIPP CORPORATION
224 Waubesa St. • Madison 10, Wis., U.S.A.

If you write maker identify as IEN - 13383

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch grams ...inch ounces ....inch pounds ...foot pounds

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 13384

NEW MEAD INDUSTRIAL
AIR POWER
CATALOG Ready!

Full of Suggestions for FASTER, CHEAPER PRODUCTION!

Illustrated, describes Air Cylinders, Valves, Air Operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. *Pneumatic Cylinders.

Write for Complete Catalog

MEAD SPECIALTIES COMPANY
4114 No. Knox Ave., Dept. 124A, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 13385

With "CONTROL" ONE good towel gets a chance!

In spite of what you read and hear, high quality towels are often wasted just like cheap towels because users snatch two or three from a cabinet without giving one good towel a chance to prove that it can completely dry the hands.

But Mosinee Controlled Cabinets, which dispense just one pure sulphate Mosinee towel at a time, give the user a chance to dry his hands on the *first* towel. He seldom needs a *second*. That is why Mosinee Controlled towel services are showing from 25% to 50% cuts in towel costs. You can prove this by a trial in your own washrooms.

MOSINEE Sulphate Towels

MOSINEE means better towel service at less cost.

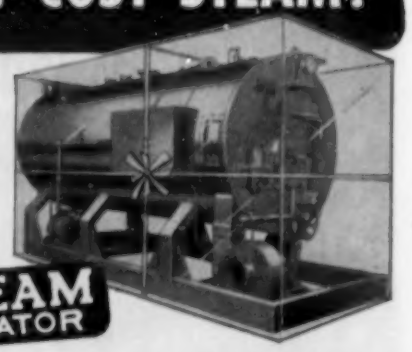
BAY WEST PAPER CO.
1114 West Mason Street
GREEN BAY • WISCONSIN
Division of Mosinee Paper Mills Co.

Send For MOSINEE SAMPLE TOWELS and data on Controlled Cabinets

If you write maker identify as IEN - 13386

TROUBLE-FREE PACKAGE for LOW-COST STEAM!

10 to 600 h. p.
15 to 200#
OIL or GAS



AMESTEAM GENERATOR

- Complete — ready to connect and operate.
- Saves fuel — 80% guaranteed efficiency.
- Saves labor — fully automatic.
- Easy maintenance — all parts readily accessible.

WRITE FOR FREE BULLETIN TODAY

AMES IRON WORKS INC.
BOX E-124
OSWEGO, N. Y.

AMES IRON WORKS
Box E-124, Oswego, N. Y.
Gentlemen:
Please send me further information on AMESTEAM GENERATORS and name of nearest representative.
NAME.....
COMPANY.....
ADDRESS.....

USEFUL INFORMATION —Continued

If you write maker identify as IEN - 13387

Management—Picture bulletin provides illustrated tour through company's plant

Twenty-eight points of interest are included in the plant tours conducted through the company's West Allis Works. These points are illustrated in 32-page booklet, "Highlights", which service as a guide to visitors. It shows activities in Tractor and General Machinery Divisions. Allis-Chalmers Mfg. Co., 900 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as IEN - 13388

Management—70th Anniversary booklet features the city in which this company is located

Kalamazoo is principal subject of the company's 70th Anniversary booklet, "The City Hammond Calls Home". It is described as a home-centered city with the accent on recreation. Pictures and captions describe activities, business and educational facilities, summaries company's products. Hammond Machinery Builders, 1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

If you write maker identify as IEN - 13389

Packings★—Circular cardboard selector for packings by service, pressure, temperature

Packing Selector is new 6-in. circular unit intended to assist you in picking the correct packing for a given application. Four quadrants on an outer circle cover gaskets, valve stem, centrifugal and reciprocating-pump applications. Each is subdivided by pressure and temperature ratings. The inner circle is set to the given conditions, and the packing number read off at a window against the material being handled, such as water, air, steam, brine. A chart on the back lists sizes. ★Your company letterhead required to obtain this selector. The manufacturer will service direct inquiries only. New York Belting & Packing Co., 1 Market St., Dept. IEN, Passaic, N. J.

If you write maker identify as IEN - 13390

Plastics—Application instructions for vinyl dispersion coatings for paper, fabric

Vinyl Resin QYNV applies in liquid dispersion form by dipping, spreading, roller coating, spraying. It provides a durable film coating baked on most materials with a minimum of equipment. It resists oil, grease, alcohol, acids, alkalis. Company has prepared new 36-page Technical Bulletin J-606 on preparation, flow properties, baking and fusing, foaming, molding, along with properties. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 13391

Rope—How to make a splice and suggestions on rope care in reprint folder

Illustrated steps in making an eye splice, methods of making a short splice and a long splice, common knots and splices used in maintenance rigging, are shown in 4-page reprint of an article from the literature. Title is "Get the Most from Your Rope." The folder also illustrates and describes 14 rules for rope care, shows safe loads at various sling angles, lists loads that can be lifted by rope size and tackle combinations. New Bedford Cordage Co., Dept. IEN, New Bedford, Mass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings. . . See Page 50

If you write maker identify as IEN - 13392

NOW...it's only a one-man job!

You can work anywhere with the Bux Magnetic Drill Press. This portable unit pays for itself during the first few days of operation. It's anchored in place instantly wherever you have a difficult drilling position. Designed for easy drilling, reaming, tapping and countersinking of structural shapes, bar stock, machinery, jigs and fixtures. You'll cut maintenance costs in half and save time on every job.

"Holds still while you drill"
BUX
MAGNETIC DRILL PRESS

- Stand Weight—only 34 pounds
- Drill Stroke—10 inches
- Will drill up to 1¾" holes
- Magnetic Hold—over 500 pounds
- Operates on 115 volts, AC or DC
- Unconditionally GUARANTEED

WRITE TODAY for descriptive literature and name of nearest dealer.

BUCK MFG. CO.
100 Cypress Ave., Los Gatos, Calif.

If you write maker identify as IEN - 13393

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this 32 page Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate*

WESTERN Precipitation CORPORATION
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF EMPIRICAL MATERIALS FROM GASES & LIQUIDS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

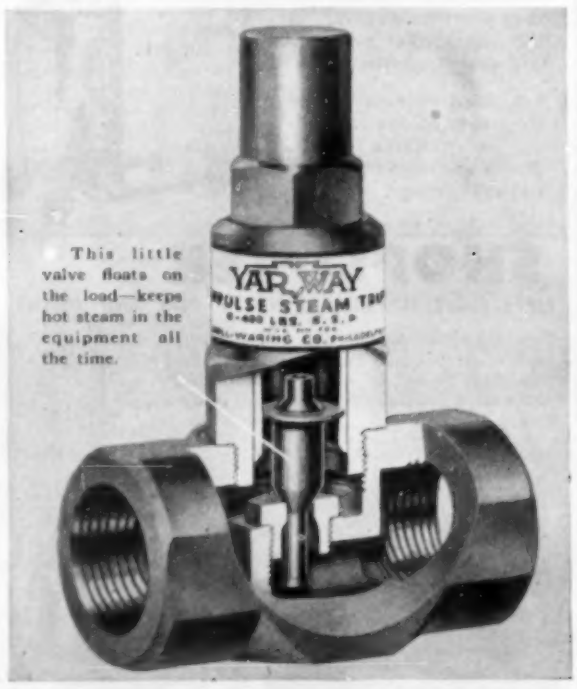
If you write maker identify as IEN - 13394

STEAM TRAP VALVE SAVES YOU MONEY

Your steam-heated equipment can turn out more production because of this little stainless steel valve.

It is the only moving part in a Yarway Impulse Steam Trap, and *it floats on the condensate load*. When steam is turned on, the little valve opens wide . . . discharges condensate and air *continuously* and brings the equipment *to production temperature in the shortest possible time*. After that, it passes, with a pulsating action, all condensate as it forms—*keeps a maximum, steady temperature in the equipment*.

Result to you—more production per day.



This little valve floats on the load—keeps hot steam in the equipment all the time.

Other Yarway Impulse Steam Trap advantages—small size, low initial cost, easy installation, low maintenance, stainless steel construction, and quick availability from over 200 local industrial distributors.

Over 900,000 Yarways have been sold to nearly all industries. Write for free Yarway Trap Book T-1740.

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY | impulse steam trap

If you write maker identify as IEN - 13396

RIVETT

gasket-mounted hydraulic valves

Features For Your Broader Control

1. Greater flow capacity.
2. Less pressure drop.
3. More compact in size.
4. Seven spool designs for 3 and 4-way control.
5. Dust sealed and moisture resistant. Roomy wiring box.
6. Continuous duty, shock mounted solenoids.
7. Shock resistant spool.

Series 6600 Solenoid Pilot Operated.
Series 6500 Direct Solenoid Operated.

3000 PSI — 6600 Series furnished in 1/2", 3/4", 1", 1-1/4" and 1-1/2" sizes. **6500 Series** furnished in 1/4" size.

Get new Catalog — shows why new Rivett gasket mounted solenoid pilot valves are best; illustrates flow operations for all piston designs. A must on every board!

RIVETT LATHE & GRINDER, Inc.
Dept. IEN 12, Brighton 35, Boston, Mass.

Rivett Furnishes A Complete Power Package— Air and Hydraulic Valves, Cylinders, Power Units

If you write maker identify as IEN - 13397

If *yours* is to be a *Superior* machine

It deserves the *best* variable speed drive

GET *Graham*

variable speed drive

- **ULTIMATE in SIMPLICITY and COMPACTNESS**—only the Graham is a straight line extension of a standard induction motor—or available without motor.
- **UNLIMITED SPEED RANGE**—from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY**—of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS**—such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE**—Fifteen years satisfactory use as standard equipment.
- **LOW COST**—a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, Menomonee Falls, Wis.

GET *Graham* *most reliable variable speed drive made*

Because engineered and rated for continuous round the clock service

If you write maker identify as IEN - 13399

Fabricating - Steel angle and fittings to build shop structures

Source: COLSON CORPORATION
340 Cedar St., Dept. IEN, Elyria, Ohio

Strong and rigid

The company announces exclusive manufacture and sale, in the United States, of the Structo steel angle, fittings and accessory parts including panels, gusset plates, casters, hinges, bins and trays. The angle is available in standard 10-ft. lengths or specified shorter length. It is made of 11, 12 or 14 gage steel in section sizes measuring 3 by 3 in., 3 by 1½ in., and 1½ by 1½ inches.

Each angle and fitting carries a patented series of round and elongated holes to take standard ⅜-in. bolts. Work benches, scaffolding, rams, ladders, work platforms, bins, racks, small building structures are typical applications.

If you write maker identify as IEN - 13400

Welding - Arc electrode for all-purpose use on mild steel

Source: NATIONAL CYLINDER GAS CO.
840 N. Michigan Ave., Dept. IEN, Chicago 11, Ill.

Specifications upon request

Sureweld "CE" is a new electrode for application in any position over a wide current range. Deposit is accompanied by negligible spatter. The weld bead is uniform and from flat to slightly convex in profile. Classification is AWS E-6010. Tensile strength of the deposited metal is to 85,000 lb. per square inch. Seven sizes measure 3/32 to 5/16 inch. Three lengths are 12, 14 and 18 inches.

If you write maker identify as IEN - 13401

Truck - Fork lift attachment applies on Ford tractor, for yard use

Source: SHERMAN PRODUCTS INC.
3200 W. 14-Mile Road, Dept. IEN, Royal Oak, Mich.

Steers by power

Load rating is 2 ton and lift is to 10 ft. for this new hydraulic attachment for a Ford tractor. The unit takes 27, 33 or 48-in. lift forks. It also can be employed in connection with attachments to serve as a crane, an angle dozer, a scoop bucket, a concrete bucket or to handle concrete blocks. All of the attachments are interchangeable. Power for the hydraulic operation is from the take-off on the truck.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13402

New Catalog of Precision RUBBER PARTS

. . . by *Stalwart*

If you have a rubber part problem . . . SEE STALWART FIRST! Here's a 16-page multi-colored and illustrated catalog that explains Stalwart's ability to mass-produce custom engineered rubber parts. Hundreds of rubber stocks are charted for physical properties as well as the extreme temperature resistant Silicones. Sections of catalog indicate methods of fabrication and indicate processes by which various parts should be produced for maximum performance at the most economical price.

Write today for catalog No. 515R-1 for complete information.

5040-SR

STALWART RUBBER COMPANY

Mfg. Plants in Bedford, Ohio and Jasper, Georgia
Main Offices 152 Northfield Rd., Bedford, Ohio

If you write maker identify as IEN - 13403

Throat DRY, PARCHED, DUSTY?

YOU NEED . . . DUPOR No. 40

The respirator whose 40 sq. in. double filters provide double protection against pneumoconiosis and silicosis producing dusts. Double comfort in breathing, too! Light, less than 5 ounces—compact—sturdily constructed. U. S. Bureau of Mines approved. Order sample today, $3.00 postpaid.

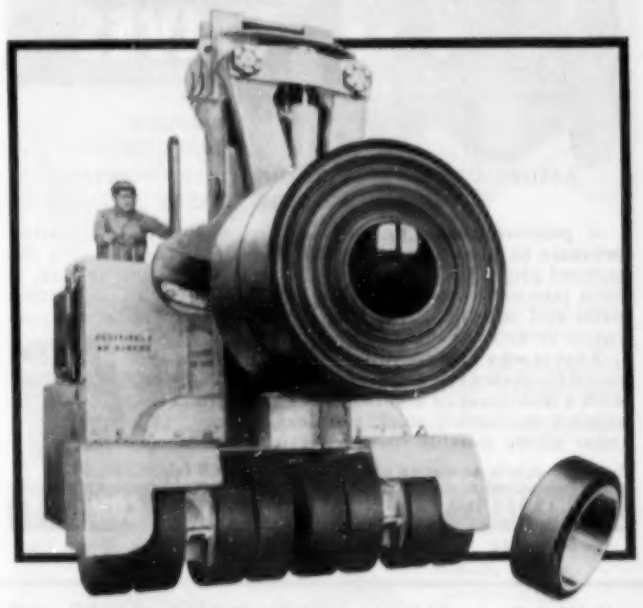
H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

If you write maker identify as IEN - 13404

For big jobs or small—

Get Goodyear JOB-FITTED Industrial Tires



WHATEVER your tire needs—whether for a small wheelbarrow or a big heavy-duty truck like the one above—your Goodyear dealer can supply exactly the type tire best suited for your particular equipment. His recommendation is based on giving you industrial tires that last longer, perform better and reduce material handling costs. The reason? Every tire your Goodyear dealer recommends is job-fitted these three ways:

Tread Design is Job-Fitted – Smooth or Grooved for easy rolling – All-Service or the famous All-Weather wherever traction is needed.

Compound is Job-Fitted – Your choice of either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound *at no extra cost!*

Size is Job-Fitted – Over 100 different solid types and sizes plus a full line of pneumatic and semi-pneumatic tires make Goodyear Industrial Tires America's most complete line.

For a free job-fitted tire appraisal in your plant—and suggestions on how you can cut tire costs, call your local Goodyear Dealer this week. Or write: Goodyear, Industrial Tire Sales, Akron 16, Ohio.

Smooth Solid
All-Service Tread Xtra Cushion
All-Weather Tread
Rib All-Weather Pneumatic
Semi-Pneumatic Cushion

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR
INDUSTRIAL TIRES
All-Service, All-Weather, Xtra Cushion—T.M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN-13406

TODAY'S BEST BUY!

Write for Details or See Your JOHNSON DEALER

MODEL J
10" x 18" Capacity

BONUS CAPACITY AT NO EXTRA COST

CUTS 10" ROUNDS, 18" FLATS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN-13407

END VALVE OPERATING DIFFICULTIES
IN HIGH TEMPERATURE . . . HIGH PRESSURE AND CORROSIVE SERVICES WITH . . .

HOMESTEAD Lever-Seald PLUG VALVES

THEY ARE STICK-PROOF . . . OPERATE INSTANTLY

ASSURE DEPENDABLE, TROUBLE-FREE CONTROL OF "HARD-TO-HOLD" FLUIDS

A positive mechanical means for (1) relieving seating pressure to permit easy operation, and (2) for pressing the tapered plug firmly into its seat to give drop-tight service, is built into every Homestead Lever-Seald Valve. All operating parts and seating surfaces are fully protected from the corrosive or erosive effect of line fluids.

That is why Lever-Seald Homestead Valves are noted for their extremely long continuous service, with a minimum of maintenance. They are available in semi-steel, steel, stainless, bronze, and other alloys suitable for the service conditions.

Send for details and copy of VALVE REFERENCE BOOK No. 39-3.

HOMESTEAD VALVE MANUFACTURING COMPANY
P. O. Box 85 "Serving Since 1892" Coraopolis, Pa.

If you write maker identify as IEN-13408

CANNING COMPANY CUTS COSTS WITH SLO-SPEED

Plant Supt., V. Rubino, reports that San Jose Canning Co. has effected many plant economies resulting from the following advantages of Slo-Speeds . . . Slo-Speeds provide the gear reductions required by our machinery . . . they require less mounting space and allow easier installation of other equipment in the line . . . totally enclosed gearing eliminates corrosion of outside bearings, gears and shafts exposed to steam and water . . . Slo-Speeds permit easier, more systematic lubrication, require less maintenance.

STERLING SLO-SPEED GIVES YOU THE ONE BEST LOW SPEED AND gives uninterrupted service — carries heavy overhung loads — provides versatile mounting and flexibility in arrangement of machinery — saves valuable space — provides greater safety — costs less to install and use. An indispensable source of low speed power for:

Agitators	Dryers	Presses
Blenders	Feeders	Pumps
Blowers	Kilns	Screens
Conveyors	Mills	Tumblers
Cookers	Mixers	Etc., etc.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. M-422

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago 35; Los Angeles 22; Hamilton, Canada; Santiago, Chile • Offices and distributors in all principal cities.

USEFUL INFORMATION—*Concluded*

If you write maker identify as IEN-13409

Aluminum★—Book of 160 pages deals with aluminum rod, bar, wire and their uses

Production of aluminum is introductory section in new "Rod, Bar and Wire Product Information Book." This is followed by descriptive sections on properties and qualities of aluminum, standard rod, bar and wire products, alloy properties and designations. Instructions are given on machining methods, forming techniques, welding, soldering, brazing, riveting, finishing. Tables present standard sizes, tolerances, weights, heat treatment, wire and sheet gages, conversions. ★Your company letterhead and title required to obtain this literature. The manufacturer will service direct inquiries only. Kaiser Aluminum & Chemical Sales, Inc., 22 N. La Salle St., Dept. IEN, Chicago 1, Ill.

If you write maker identify as IEN-13410

Testing★—Instruction manual on 35 tests for petroleum and its products

List price is $1.75 for new 28th Edition of the "Fisher/Tag Manual for Inspectors of Petroleum." The book describes apparatus and procedures for 35 petroleum tests such as gravity, color, viscosity, flash point, melting point, sulfur content. A large part of its 22 pages consists of reference and conversion tables. There is a cross-index and a numerical index to the ASTM methods employed. Page size has been increased over previous editions. ★Your check and company letterhead required to obtain this literature. The manufacturer will service direct inquiries only. Fisher Scientific Co., 717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN-13411

Lift Trucks—Why use a small one is answered by booklet from small plant standpoint

Reasons why are given at the start of new 28-page booklet, "Why the Small Fork Truck", written by Nathaniel Warshaw. Primary reason is to put a small plant on the same material-handling footage as a large plant. Text continues by presenting considerations involved such as load, counterbalance, mechanism, maintenance points. Following this is a description of the company's Load-Mobile fork truck, aisle-stacking and turning tables, accessories. Market Forge Co., 25 Garvey St., Dept. IEN, Everett 49, Mass.

If you write maker identify as IEN-13412

Water Treating—Information booklet on water pollution and how to combat it

"Clean Water—and How to Get It" is title of new 36-page Booklet GEA-6006. The booklet is part of a program to build public support for proper sewage treatment, one of the company's "More Power to America" programs. General Electric Co., Dept. 6X-210, Schenectady 5, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Best U. S. investment:

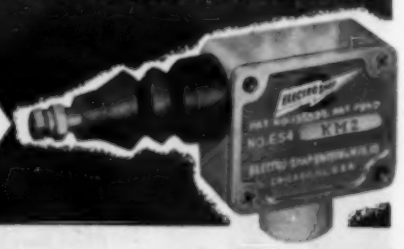
United States Savings Bonds

If you write maker identify as IEN-13413

ELECTRO SNAP

ONE WAY IMPULSE SWITCH FOR SIMPLIFIED CONTROL

EXCLUSIVE ACTUATOR LETS YOU DO THINGS YOU NEVER COULD BEFORE!



Model ES4-KM2

- **Eliminates Interlocking Switches and Complicated Actuating Dogs**— Ideal for pulsing solenoid valves, air-hydraulic cylinders.
- **Gives More Dependable Operation**— Replaces complicated controls.
- **Lowers Cost of Controls Circuits**— Fewer switches, etc., required.
- **Faster Automatic Operation**— Closer sequencing possible.

Switch rated at 10 amps, 125/250 v. AC. Four models available with overtravel and pulsing strokes from 1/16" to ⅜". Write for Data Sheet ESK-12.

See our catalog in PRODUCT DESIGN FILE or write for copy

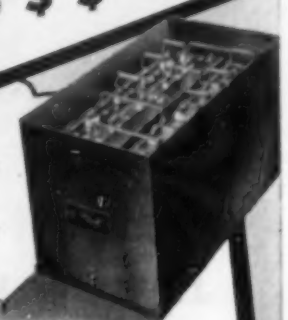
ELECTRO-SNAP SWITCH AND MFG. CO.
4224 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN-13414

CASE HISTORIES PROVE YOU CAN SAVE $ $ $

with SPRAGUE POWER FACTOR CAPACITORS

- CUT POWER BILLS
- AVOID EXTRA EQUIPMENT
- ALLOW BIGGER LOADS
- PROVIDE PLANT FLEXIBILITY



Thousands of installations throughout industry are proving daily that Sprague Power Factor Capacitors installed at each piece of inductive electrical equipment eliminate waste current *right at the source*. Power factor is corrected to the maximum, allowing a greater load at reduced power cost. Need for extra wiring, switchgear, and transformers is often avoided, and plant expansion or moves can be made at minimum cost. *Write for Free 28-page Power Factor Correction Guide.*

SPRAGUE®

Industrial Capacitor Div.
SPRAGUE ELECTRIC CO.
165 MARSHALL STREET
NORTH ADAMS, MASS.

If you write maker identify as IEN-13415

SPECIAL TAPS by DETROIT

ARE TOPS FOR A GOOD REASON

Every detail of every special tap produced is recorded under a unique Detroit Tap system.

This record system controls quality from your first order. Having found the "right" tap for the job, you'll get the same results with every additional tap you order.

Such records minimize development of special taps. Often, the new problem is so similar to a previous one—already a matter of record—that a minimum of research and engineering is required. The advantage of such service is obvious. See your Detroit Tap representative today.

DETROIT TAP & TOOL CO.
8615 E. EIGHT MILE RD. BASELINE, MICHIGAN

If you write maker identify as IEN-13416

IMPORTANT NOTICE

The Genuine MAUSER VERNIER CALIPER

IS NOW MADE OF STAINLESS STEEL THROUGHOUT

The fine finish will not tarnish or deteriorate in many years of use.

NEW #101

$14.75 POSTPAID

. . AND THE FOLLOWING IMPROVEMENTS HAVE BEEN ADDED

★ A SPECIALLY LONG VERNIER to read the thousandths
★ A HARDENED PHOSPHOR-BRONZE adjustable gib retains accuracy
★ 3 EASY READING SCALES • 1/1000" • 1/128" • 1/10 mm. in back

Request Illustrated Folder showing complete line of MAUSER Toolmakers Calipers, Height gages, Bevel Protractors and Tool Stands.

Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN-13417

New . . .

a heavy duty tape rule with a wide ¾" line in CHROME CLAD . . . *It's the Finest Ever Made!*

LUFKIN **CHROME CLAD Super MEZURALL**

In 10 Ft. (C9310) and 12 Ft. (C9312) LENGTHS

Graduated in feet and inches to 8ths on this edge.

All Metal "Chrome Clad" line is built up with multiple electroplatings — won't crack, chip or peel. Jet black markings are bonded right to the steel.

Rugged, heavy-duty ¾" steel line is flexible yet extends farther unsupported.

Every 16" marked with diamond for quickly determining 16" centers.

Graduated in consecutive inches to 16ths on this edge.

BUY LUFKIN TAPES • RULES • PRECISION TOOLS FROM YOUR DISTRIBUTOR

338

THE LUFKIN RULE CO., SAGINAW, MICH.
132-138 LAFAYETTE ST., NEW YORK CITY • BARRIE, ONT.

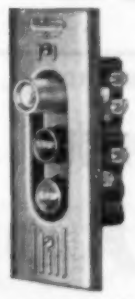
If you write maker identify as IEN-13418

Bulletin 10250H1935 is standard enclosure with 110-220V indicating light.

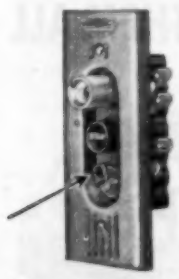
NEW CUTLER-HAMMER 10250

STANDARD DUTY PUSHBUTTON STATIONS

3 element type . . . with indicating light



Bulletin 10250H1939 steel panel mounting "start-stop" with indicating light.



Same with padlocking feature on stop button to prevent operation.

Check the features. No other standard duty pushbutton station offers so much. U-shape wrap-around cover and frame make unit strong, serviceable yet light and small. Recessed pushbuttons prevent accidental operation. Optionally, the stop button can be padlocked against unauthorized use. Indicating light normally removed from front of case, but "twist of wrist" locks it in against pilfering. The same one low watt glow lamp serves both 110V or 220V, by changing one terminal connection. Plainly marked circuit arrangements facilitate correct hook-up. Removing cover places terminals out in open for maximum accessibility. Packaged connectors included, electrician does not have to make them up. Oversize insulation panel affords complete protection yet cut on bias for access to mounting screw-holes. Frame and cover finished inside and out in baked light gray enamel. Standard enclosure for surface mounting or steel front panel for cavity mounting. See your authorized Cutler-Hammer Distributor today and *see the difference.* CUTLER-HAMMER, Inc., 1378 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ontario.

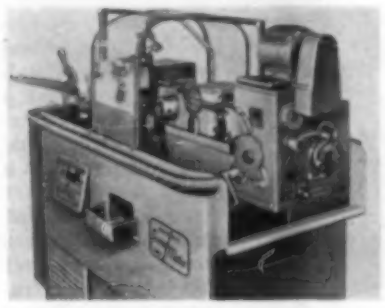
INSTALLS EASIER • WORKS BETTER • LASTS LONGER

CUTLER-HAMMER MOTOR CONTROL C-H

If you write maker identify as IEN-13420

Lathe - Automatic screw machine, single spindle design, to 5,100 rpm.

Source: GEAR GRINDING MACHINE CO.
3901 Christopher St., Dept. IEN, Detroit 11, Mich.



Specifications on request

Variable speed spindle drive with belt connection to the spindle, stock feed by means of low pressure air cylinders and a slide mounted six-station turret that can be set for turning lengths to 6 in. feature the assembly of this new Screwmatic-750 single spindle screw machine. The spindle drive permits a choice of three different spindle speeds during any work cycle by setting a dial.

Reversing drive design eliminates need for left hand tools. Reversing action is by means of air pressure. The V-belt sheave rides in its own bearings and drives the spindle by means of a spline so none of the drive pull is imposed on the spindle bearings.

The standard turret takes tools to 0.75 in. in diameter. It takes bar stock to the same diameter and in lengths to 2¼ in. with a standard 7-in. feed cam. Greater length, to 6 in., is obtainable by using a larger cam and by retracting the turret on the machine base. The turret slide is equipped with a three position crank setting and turret index drive with three index speeds of ¼, ⅓ and ½ second. Cam shaft cycle speed ranges from 1.8 to 240 seconds.

The machine provides unrestricted tooling space and includes an open end chip well from which chips can be removed without interfering with the operation. Simplified forms of the machine are available for long run production of simple parts.

If you write maker identify as IEN-13421

Pump - Submersible turbine design, rates 30 to 260 gpm. in 6 to 8 in. well

Source: BYRON JACKSON COMPANY
Box 2017, Dept. IEN, Los Angeles 54, Calif.

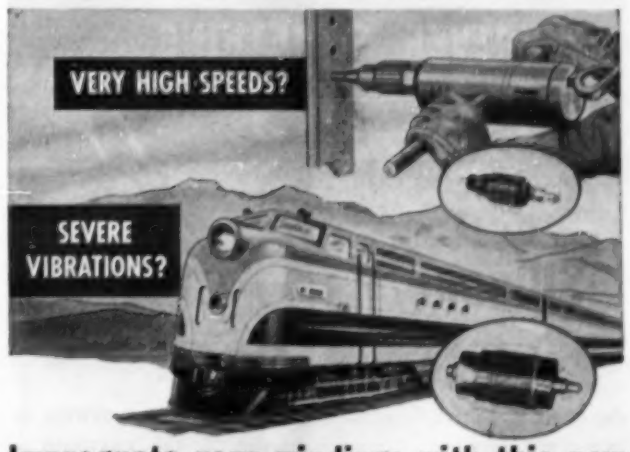
Motor runs in oil

Pressurmatic trade names a new non-mechanical oil pressurizing device, for application on the company's Subettepump, to seal the oil in the submerged motor. The tank assembles on the bottom of the pump, beneath the motor, to keep the pump up from the bottom of the well. The motor mounts just above the Pressurmatic tank and the multiple stage turbine type pump is direct connected above it.

The pump is selected from the company's deep well turbine line to fit specified requirements for primary water supply and booster service and as a means to supply water for processing, washing, fire fighting, cooling tower duty as well as for small unwatering applications. Available motor sizes range from 5 to 35 horsepower.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13422



Impregnate your windings with this new high-strength varnish — IRVINGTON No. 140

Lab tests prove it—field studies confirm it! The exceptional bonding strength of Irvington No. 140 prevents coil movement at high speeds or under severe vibration.

In addition, it offers high resistance to heat, oil and chemicals; excellent electrical properties; unusual stability.

Get the facts on this new Irvington insulating varnish—write for technical data bulletin.

LOOK TO IRVINGTON FOR INSULATION LEADERSHIP

IRVINGTON VARNISH & INSULATOR

DIV. OF MINNESOTA MINING & MFG. CO.

31 ARGYLE TERRACE, IRVINGTON 11, N. J.

Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ontario, Canada

If you write maker identify as IEN-13423

5416

CUT COST of PRECISION gear PRODUCTION

THIS FACT has been demonstrated time and time *again*

If you produce small, fine pitch, precision gears, up to 6" O.D. of the gear blank, use of the Hamilton Precision Gear Hobber will enable you to attain more gear precision with no sacrifice in gear production, or increased gear production with no sacrifice in gear precision . . . or both!

WANT FACTS?

Write for Hamilton Bulletin No. 5416.
Address The Hamilton Tool Company
905 Hanover Street,
Hamilton, Ohio.

IT'S A **Hamilton Tool**

USE IT WITH CONFIDENCE

If you write maker identify as IEN-13424

For Best HIGH-SPEED Performance Use . . .

GENERAL

WIDE-BASE PNEUMATICS

They save time • money • labor. Give you cost-saving advantages at all speeds.

General has pioneered every important advance in the field!

You can trust GENERAL'S complete line for the exact design for every purpose.

- More load capacity at low or high speeds
- Cushion equipment and loads reducing breakage and spillage
- Save high cost floors and floor surfaces
- Slow, even wear for long service
- High flotation for easier rolling over soft ground
- Rolls easier, smoother over all surfaces.

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 35"—200 to 7890 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid

CASTER FORKS

Wide-Base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Swivel

SEND FOR CATALOG DEPT. 6

The GENERAL TIRE & RUBBER CO. Akron, O.

If you write maker identify as IEN-13426

An *alert* watchman would have fought that fire *before* it got out of control. Play safe with the Detex GUARDSMAN Watchclock . . . . , which *keeps* watchmen on their toes nights, days, weekends, holidays.

Don't wait for disaster to strike. Today write for free folder.

DETEX
WATCHMENS CLOCKS
PATROL
ALERT
ECO
NEWMAN
GUARDSMAN
DETEX WATCHCLOCK CORPORATION
Dept. E-12
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities

If you write maker identify as IEN-13427

ENGINEERED CONTAINERS FOR EVERY SHIPPING NEED

General Box

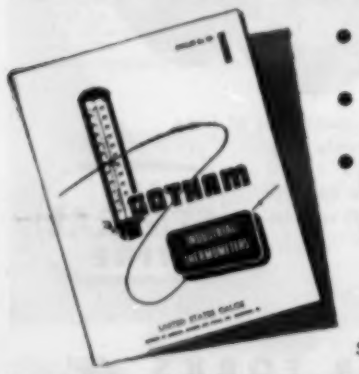
1815 Miner Street, Des Plaines, Illinois

★ ★ ★ ★ ★

If you write maker identify as IEN-13428

NEW! INDUSTRIAL THERMOMETER CATALOG

YOU'LL WANT IT FOR YOUR FILES



- Gives complete specifications.
- Illustrates typical applications.
- Includes the new "Multi-Angle" Industrial which eliminates the need for "specials". Adjusts to any angle.

Send coupon for your free copy.

United States Gauge
Division of
American Machine and Metals, Inc.
Sellersville, Pa.

GOTHAM INSTRUMENTS
USG
UNITED STATES GAUGE

Please send me Gotham Industrial Thermometer Catalog No. 101.

Name ..... Title .....
Company .....
Address .....
City ..... State .....

If you write maker identify as IEN-13429

Pyrometer - Photoelectric equipment to read and control high temperature

Source: PHOTOSWITCH INCORPORATED
77 Broadway, Dept. IEN, Cambridge 42, Mass.

Details on request

A scanner, consisting of a phototube and lens assembly with a variable iris, and a control unit, containing an electronic amplifier, a relay and a meter, make up this new control pyrometer. The scanner is aimed at a hot object that is emitting infrared radiation. Rising temperature, accompanied by equally increasing radiation, is transmitted to the control unit to actuate the meter and the control relay. The latter can be set at a desired temperature point within a range from 1,000 to 5,000 deg. F.

The relay rates 10 amp. on 110-volt ac. It is single-pole double-throw design. The equipment connects to a 110 or 220-volt ac. input line. Sensitivity is one footcandle full scale. Typical applications are in connection with induction heating, forging, welding, processing, melting.

If you write maker identify as IEN-13430

Cleaning - Steam spray machine oil or gas fired, delivers hot solvent

Source: HOMESTEAD VALVE MFG. CO.
Box 85, Dept. IEN, Coraopolis, Pa.

Bulletin 17-A-40

Portable and stationary assemblies, motor and engine driven designs are included in this new Series-1800 line of Hypressure Jenny steam cleaning machines. Each of the nine models rates 180 gph. of steam cleaning capacity to remove heavy deposits of grease and dirt from machinery, equipment, tracks, machine parts. Two are available with nozzle control and automatic pressure control switches and have flushing and rinsing capacity to 480 gallons per hour.

The machine can be placed in steady operation within 2 min. from a cold start. Each assembly includes a cool grip cleaning gun with a round nozzle, 2-in. and 4-in. flat nozzles and 25 ft. of vapor hose.

If you write maker identify as IEN-13431

Despatch Oven Co., 619 Eighth St., Dept. IEN, Minneapolis 14, Minn., has developed a new oven to bake varnish-dipped motor armatures and field coils without danger of explosion and without spreading poisonous gases during the baking operation. The oven includes a forced exhaust system that carries away explosive gas concentrations. Induced air exhaust equipment is power driven and is controlled by an electric timer located on the instrument panel of the oven.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13432

WHEREVER SOMETHING STICKS

You'll Find A Use For

IMS

Silicone Spray!

ON ROLLS — SEALER JAWS — HOT CRIMPERS — FILM SEWERS — EXTRUDER TAKEOFFS — WIRE DRAWING — DIE CASTINGS — INVESTMENT CASTING — METAL STAMPING — ETC.

This pure silicone fluid is finding new uses every day. Investigate now — it may cut your rejects too! The most economical way to adapt the miracle low surface tension of silicone fluid to all your sticking problems! It's only $2.00 per can in singles, $1.50 per can in unbroken dozens, $1.37 per can in gross lots, delivered to your plant.

ORDER SOME TODAY!

INJECTION MOLDERS SUPPLY CO.
3514 LEE RD. CLEVELAND 20, O.

If you write maker identify as IEN-13433

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN

ARIDIFIER

Scrubbed CLEAN AND DRY

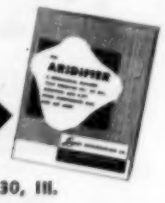
INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jolting Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN-13434

COUNT BY WEIGHT

Control Costs with New TOLEDOS

These new Counting Scales eliminate slow, tedious hand counting of parts . . . count hundreds of parts *accurately* in a few seconds! Complete line—for issuing predetermined quantities . . . counting unknown quantities . . . for faster inventory counts . . . or to get accurate receiving, shipping, and piece-work counts. Choice of double and triple ratio combinations. Send for booklet. Toledo Scale Company, Toledo 1, Ohio.

Model 4655

Portable Type

TOLEDO®
HEADQUARTERS FOR SCALES

If you write maker identify as IEN-13435

Wide *or* Narrow...

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, one C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

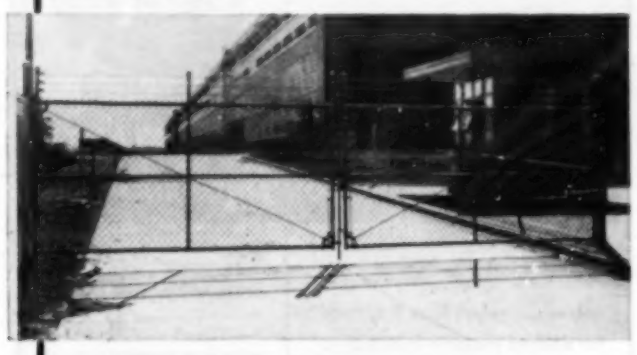
CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN-13436

REALOCK FENCE

Protection that's all around your grounds; all around the clock. An ever-present, ever-vigilant guard against arson, burglary, vandalism and other costly hazards.

See your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate and catalogs.



THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION

BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN-13437

NEW DUMORE Automatic DRILL UNIT simplifies tooling requirements!

it's built to HALVE drilling costs

...with more mass production features!
...with more cost reduction features!

Already proved in use, the new Dumore Automatic Drill Unit is engineered to *earn* and *save* more on the production line.

★ Easy mounting in any position.

★ Built-in controls for manual, semi-automatic and automatic operation.

★ Positive, no-slip spindle drive with ten selective spindle speeds.

★ Economical low-air-volume operation.

★ Air and hydraulic systems completely separate—minimizes maintenance.

★ Keeps tooling simple—tooling costs low.

★ Individual unit control provided in multiple unit setups — for rapid tool changes or job conversions.

★ When mounted on a standard drill press column, the unit becomes a self-contained, automatic drilling and tapping machine.

★ Full 3" stroke with depth adjustment to within ± .001".

★ Built-in auxiliary circuits for automatic activation of transfer equipment, indexing fixtures, other drill units for sequence operation in multiple setups.

PLUS these special operating features obtainable with Dumore accessories:

★ *Dumore Repeat Cycle Timer* — for *automatic stage drilling and tapping* of deep holes—providing automatic chip clearance, better holes, less drill and tap breakage.

★ *Dumore Hydraulic Control* (optional) . . . for quick insertion or removal. Allows rapid approach, controlled feed through work.

★ A variety of mounting accessories is available for adapting to existing or specially designed equipment.

Get all the details! Send for descriptive bulletin today!

RACINE, WISCONSIN

DUMORE
PRECISION TOOLS

If you write maker identify as IEN-13439

Testing - Laboratory apparatus tells components in complex solution

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

Amperometric Titrimeter

Traces of impurities such as cadmium, copper, zinc, lead, antimony, arsenic can be picked out of complex alloy solutions when employing this new combination of Amperometric equipment and the company's previously developed Elecdropode manual polarograph. Essential components such as chromium, cobalt, nickel, manganese, vanadium, titanium can be assayed precisely in solutions as dilute as 0.000001 normal. Chloride and bromide can be isolated from other halides, cyanide, phosphate, chromate, sulfate and other ions can be found by titration. The complete apparatus lists at $700. The new accessory alone is $175. The Elecdropode is $525. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN-13440

Welding - Arc electrode for production use on mild steel

Source: MARQUETTE MFG. COMPANY
307 E. Hennepin, Dept. IEN, Minneapolis 14, Minn.

Technical data upon request

Marq-Rod 12 is a new coated arc electrode in which the coating contains powdered iron. It is designed particularly for high speed production welding on mild and low alloy steels. It is self-starting and re-starting and self-cleaning with practically no spatter. Previous welding experience is not essential for its successful application. Sizes range from 3/32 to 1/4 inch.

If you write maker identify as IEN-13441

First Aid - Flexible plastic bottle holds water to wash eyes in emergency

Source: INDUSTRIAL PRODUCTS CO.
2801 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

Patent applied for

One squeeze on the sides of this new polyethylene Wash-Away bottle starts flow to produce a continuous gravity stream of water that will last 7 to 8 min. to wash a worker's eyes in an emergency such as contact with corrosive materials. There is no pressure, other than the gravity flow, so foreign matter will not be forced into the eye socket. The bottle is permanently printed with directions for use. Capacity is 1 quart. List price is $2.25 each in quantities of 1 to 11, $1.75 in quantities of 50 or more.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13442

Process Instrumentation with MILTON ROY CONTROLLED VOLUME PUMPS

NEW BULLETIN 1253

Write for your copy, TODAY!

This New Bulletin describes completely the application of Controlled Volume Pumps to chemical feed and instrumentations systems.

- describes many types of Controlled Volume Pumps with operation and selection data.
- details 25 flow diagrams of typical instrumentation systems.

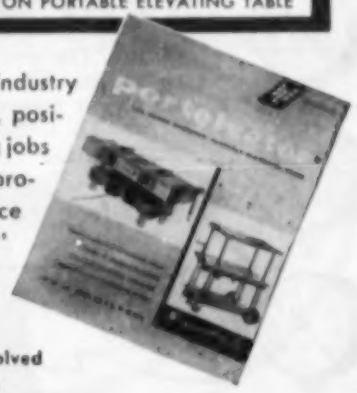
MILTON Roy COMPANY
1302 E. Mermaid Lane
PHILA. 18, PA.

CONTROLLED VOLUME PUMPS ARE FLOW CONTROL INSTRUMENTS

If you write maker identify as IEN-13443

NOW—A FREE BULLETIN

Tells HOW SPECIAL PORTELVATOR®
THE HANDY HAMILTON PORTABLE ELEVATING TABLE



● is used throughout industry to do the heavy lifting, positioning, and transporting jobs which have harassed production executives since the word "production" assumed its present meaning.

Find out how others have solved problems parallel to yours.

WRITE FOR FREE BULLETIN 5423
ADDRESS THE HAMILTON TOOL COMPANY
905 HANOVER STREET, HAMILTON, OHIO

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

If you write maker identify as IEN-13444

MODERNIZE YOUR WARNING SIGNAL SYSTEM with this NEW extra-compact powerful BENJAMIN SIREN!

TYPICAL APPLICATIONS OF THE BENJAMIN SIREN

for civil defense

for boiler alarms

for plant protection

This new siren is especially designed for modern multiple-signal installations, which overcome problems of atmospheric conditions, wind direction and industrial din. A small-yet-powerful high-torque, 10,000 r.p.m. motor and precision-machined housing makes possible extra-compact design. Famous Benjamin built-like-a-battleship construction prevents moisture from entering and assures long, trouble-free operation.

It's the 20th Century Pony Express!

FREE SIGNAL BOOK! Send for your copy of this most complete book on signaling! Benjamin Electric Mfg. Co., Dept. O, Des Plaines, Ill.

609

If you write maker identify as IEN-13445

SAFELY LIFTS 13.9 to 25 TONS

With reserve strength beyond its rated capacities, Koehring heavy-duty 304 safely lifts 13.9 tons on crawlers, has 35 to 75-ft. boom. As a rubber-tired truck or cruiser crane it lifts up 25 tons, has max. 110-ft. boom with jib. Big clutch and spring-loaded brake automatically hold boom with max. load.

KOEHRING CO.
Milwaukee 16, Wis.

KOEHRING Cranes

If you write maker identify as IEN-13446

MARSH MAKES IT!

If it's a pressure gauge or dial thermometer, Marsh makes it . . . and makes it better. The types, ranges and case styles are endless. What is "special" to other instrument makers is often standard to Marsh. To know the scope of Marsh instruments—

Write for this fact-filled catalog

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill., Export Dept., 3901 Howard St., Skokie, Ill.

If you write maker identify as IEN-13447

AS GOOD AS THEY LOOK

For New Equipment!

PIC STEEL UNIONS

Here's the ideal union for original equipment because it's bright, eye-appealing and speeds assembly and installation. Ends of heavy steel coupling stock are uniformly flat-sided, uniformly parallel to take open end wrenches. Special wedge type bronze seat for tightness. 100% zinc plating (even on threads) for rust protection. Pics are in line price-wise (They cost *less* than a galvanized, *no more* than a malleable union!)

For 150# Service — write for FREE Samples

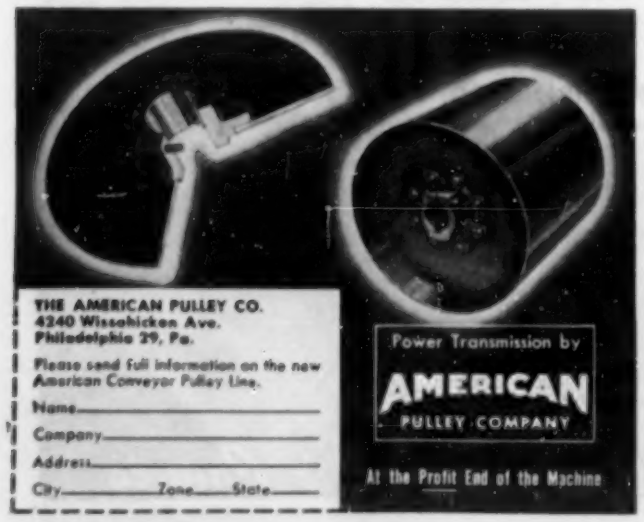
DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R.I.

If you write maker identify as IEN-13448

NEW PULLEY DESIGN MEANS LONGER LIFE, LOWER COSTS, LESS MAINTENANCE

The new design American Pulleys are the best friends a conveyor belt ever had. They're easier to install, built to take the severest kind of service, and cost next to nothing to maintain because they are fully dirt- and splash-proof. Size for size, they will outwear, outwork any other pulleys made.

New Type "HD" Pulley features the Wedg-Tite Hub, a special interchangeable split-tapered design which combines maximum strength with minimum weight to give the greatest shaft grip ever developed in a conveyor pulley. Two other types—Type "L" for light and medium duty, and Type "O" a steel split model—round out the new line to cover *all* types of service. See your distributor or write today for full information. There is no obligation.



THE AMERICAN PULLEY CO.
4240 Wissahickon Ave.
Philadelphia 29, Pa.

Please send full information on the new American Conveyor Pulley Line.

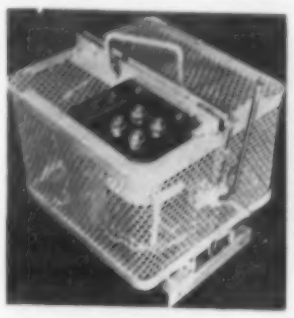
Name_____
Company_____
Address_____
City_____ Zone____ State____

Power Transmission by
AMERICAN
PULLEY COMPANY
At the Profit End of the Machine

If you write maker identify as IEN-13449

Pump - Electro-magnetic unit designed to move liquid metals

Source: CALLERY CHEMICAL CO.
Dept. IEN, Callery, Pa.



To 1,000 deg. F.

Liquid metals that will wet the pumping section and that have high conductivity, such as sodium potassium alloy, can be moved through a pipe line by this new pump. It operates on single-phase 60-cycle ac. on the principle that a force is set up to move the metal when an electrical current is passed through it in a direction perpendicular to a magnetic field surrounding it.

The pump employs two current transformers to supply current to an armature brazed to the tubular pumping section at flattened portions of the tube. Current path through the armature is continuous across one flattened portion of the tube, through the other side of the armature and across the tube's other flattened section.

The magnetic field is produced by four coils, one on each of the legs of two U-shaped laminated magnetic field cores, attached so the ends of the cores are against the flattened part of the tube perpendicular to the direction of the armature.

If you write maker identify as IEN-13450

Pump - For vacuum duty, handles 1 to 12 cfm. of free air

Source: PACKAGE MACHINERY CO.
East Longmeadow, Dept. IEN, Springfield, Mass.

Details on request

An oscillator is driven by a cam to move around the inner surface of the pump chamber in this new Rite-Way vacuum pump. Air is sucked constantly from one side and discharged at the other. Speed can be varied between 560 and 2,015 rpm. by changing the V-belt sheaves. The pump is available with a ⅙ or ½-hp. motor or a 1½-hp. gasoline engine.

Moving parts are sealed in oil. A recovery chamber, below the discharge outlet, minimizes oil consumption. A magnetic plug removes metal dust as it accumulates. Seal off is obtained by the oil film that is circulated through the pump interior by natural pressure differences created within the pump chamber. A built-in muffler minimizes noise.

If you write maker identify as IEN-13451

Skelp rolls, permanent magnet design, are now available from Eriez Mfg. Co., Grove Drive, Dept. IEN, Erie, Pa. The rolls have been designed to replace electro-magnetic rolls in propelling skelp into furnaces. Each unit consists of a steel shaft on which two cast aluminum hubs are keyed. The magnetic element is attached to these hubs. It is made up of Alnico V bar castings covered with cylindrical steel pole rings or shoes. The company has prepared a bulletin, "Permanent Non-electric Magnetic Equipment", on the whole subject.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13452

6068-CC

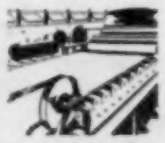
If you have a corrosion problem . . . SEE CEILCOTE FIRST! Here's a 4-page multi-colored illustrated catalog that presents comprehensive information on a complete line of corrosion-proof linings, bricks, bonding cements, protective coatings and mastic floors.

Twenty-seven of Ceilcote's corrosion-proofing materials are charted, showing their resistance to 19 of the most common chemicals which contribute to corrosive conditions in all types of industries.

Write today for catalog G-201 for complete information.

Metal Working

Chemical and Oil Refining



Pulp Paper and Textile

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION
4840 RIDGE ROAD • CLEVELAND, OHIO

If you write maker identify as IEN-13453

STANDARD OR FLANGE TYPES

ALWAYS...MAINTAIN CONSTANT, UNIFORM HYDRAULIC PRESSURE NO NOISE . . . NO MAINTENANCE

America's most dependable valves . . . select from 5 springs for desired pressure from 0# to 500# . . . and INSTALL, NO FURTHER ATTENTION NEEDED . . . EVER.

Pipe sizes: ¼" to 2"; brass or cast iron bodies.

WRITE—on your letterhead—for your personal copy of FULFLO MECHANICAL DATA BOOK. SPECIFY IF for Valves, for Pumps, or for both.

THE FULFLO SPECIALTIES CO. Inc.
PUMP AND VALVE MANUFACTURERS
BLANCHESTER, OHIO

If you write maker identify as IEN-13454

ENGRAVED *Vinylite* STAMPS

SuperSanitas FABRIC WALL COVERING

Are better than rubber 3 ways

ENGRAVED *Vinylite* IS ACID PROOF

Acid etching inks, used for permanent stamping on metal and all non-porous surfaces will eat away at rubber. Vinylite resists this action . . . gives longer life by far.

ENGRAVED *Vinylite* STAMP DIES GIVE RAZOR-SHARP IMPRESSIONS EVERY TIME

Opaque inks will clog shallow rubber stamp faces rapidly. Our deep-molded engraved VINYLITE stamp faces have more than three times the depth of ordinary rubber stamps. Markings always remain super sharp . . . the clearly identifying mark that distinguishes and labels your product of quality.

ZK

ENGRAVED *Vinylite* STAMP DIES HAVE CUSHION-LIKE RESILIENCE

Our VINYLITE molding process includes a timed curing that imparts to this versatile plastic all the elasticity of rubber. Resilient VINYLITE STAMP DIES resist abrasive action, conform to irregular surfaces . . . and last much longer!

Engraved Vinylite Stamp Dies are adaptable to any automatic or hand marking device. They can be used to stamp on every surface, metal, wood, fabric, paper, plastic, etc.

KRENGEL MANUFACTURING CO., INC.
Dept. I, 227 Fulton Street, New York 7, N. Y. • Tel. CO 7-5714

If you write maker identify as IEN-13455

AJAX INDUCTION FURNACES

helped to make this record for

BRIGGS & STRATTON CORPORATION

"More than 1,000,000 Industrial Engines built in each of two Successive years"

With holding furnaces of 20 kW similar to that in the photo above, and melting furnaces of 100 kW, Briggs & Stratton Corp., Milwaukee, Wisc., is getting increased production under cleaner, more satisfactory working conditions than ever before, *and at lower operating costs.*

Write for further information to:

AJAX ENGINEERING CORP., TRENTON 7, N. J.

AJAX TRADE-MARK **INDUCTION MELTING FURNACE**

If you write maker identify as IEN-13456

IF

you want to cut production costs

THEN

without machining, you can:

- Accurately locate drill bushings,
- Center and secure shafts in Alnico rotors,
- Anchor spindles in abrasive wheels,
- Locate and secure fixture fittings in assembly frames,
- Anchor bearings in machinery.

Bulletin A1 shows how Cerro Alloys can save time and money in above operations. Write for it today.

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall Street • New York 5, N. Y.

If you write maker identify as IEN-13457

IF your present conveyors aren't doing a PERFECT job—

INVESTIGATE this amazing NEW CONVEYOR

If your product is too hot, sharp or oily for belt or flight conveying, or too abrasive or sticky for screw or apron conveying — if you're getting excessive spillage, or if you have cleaning problems, etc. — *you owe it to yourself to investigate the Carrier Natural-Frequency Conveyor.*

These revolutionary conveyors are an entirely new *type* of vibrating equipment which substitutes Natural-Frequency spring action for brute force. Where "brute-force" conveyors may use up to 90% of their power to operate their moving parts and only about 10% to convey their loads, *the Natural-Frequency Conveyor uses substantially no more power to operate, empty, than is required to run the motor alone.*

Carrier Natural-Frequency Conveyors (including vertical vibrating spiral types) are now being used in dozens of the largest companies in America. Write for Bulletin 111, *today.* Carrier Conveyor Corporation, 2124 Frankfort Avenue, Louisville 6, Kentucky.

CHECK THESE CARRIER ADVANTAGES!

HIGH CONVEYING SPEED (Up to 100 feet per minute)

GREATER CAPACITY (Up to 200 tons per hour)

LESS POWER REQUIRED (About one-third as much as "competitive" equipment)

LESS MAINTENANCE & DOWN-TIME (Less power+good design= trouble-free performance)

NO DAMPENING UNDER LOAD (Designed with extra power for specified load, with positive stroke)

SELF-CLEANING (Continuous, smooth trough —no pockets)

COMBINES PROCESSING WITH CONVEYING (Can screen, dry, cool, dewater, blend, etc.)

WIDTHS FROM 6" TO 48" LENGTHS FROM 5' TO 250' (With pans 16 ga to ½" plate, of any metal, open or enclosed)

BALANCED, VIBRATION-FREE UNITS AVAILABLE (For use on ceilings or light floor construction)

CARRIER NATURAL-FREQUENCY CONVEYORS

If you write maker identify as IEN-13459

Bending - Hydraulic machine with double right and left hand head

Source: PINES ENGINEERING CO.
601 Walnut St., Dept. IEN, Aurora, Ill.

Right hand Left hand

The unit head and top assembly are hinged to the base of this new Series 1400-A machine so they can be set up in one position for right hand work or swung through 180 deg. for left hand operation. The arrangement permits fast interchange for bending in either direction. It permits changing the tools or mounting secondary tooling, when this is warranted by production volume.

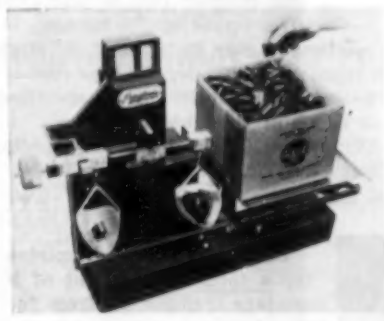
The machine will handle 16-gage steel tube to 1 in. in outside diameter. It is powered by a 3-hp. ball bearing motor operating a hydraulic pump. Toggle type clamp and pressure die holders are lever operated. The angle of bend can be selected at a 6 or 8-position turret.

The bending forms are mounted on two studs, one of which is equipped with a hold down nut. Maximum standard radius, with a rolling type pressure die, is 8½ inches. Maximum standard tube length, over the mandrel, is 5 feet. Maximum rotation is through 190 deg. at a bending-arm variable speed to 25 rpm.

If you write maker identify as IEN-13460

Counting - Ratio scale reads over and under a preset count

Source: PENNSYLVANIA SCALE CO.
Dept. IEN, Bareville, Pa.



Mounts on bench

A total count is set up by depositing work pieces in one or the other of two ratio pans on this new C-200 counting scale. Tare is balanced out by a beam adjustment after a container has been placed on the scale platform. Work pieces are loaded into the container until the scale dial reads zero. Approach to the reading is indicated by an "under" section on the dial. Over-loading is indicated by an "over" section.

The scale takes a maximum load of 50 lb. on the platform. It can be specified with sensitivity to 0.1 or $\frac{1}{32}$ ounce. It is available in several ratios, two for each assembly, minimum at 9 and 99 to 1, maximum at 12 and 144 to 1. Greater ratios, to 1,000 to 1, are available on special order. Tare weight is maximum at 20 pounds. Electronically controlled assemblies are available for repetitive production, counting, packaging.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13461

Try Them Free!

KEPS®

TESTING SAMPLES

See how this amazing new Shakeproof fastening saves assembly time and assures vibration protection. A SHAKEPROOF® Lock Washer of the right size and type is pre-assembled on each nut . . . only one unit to handle . . . the lock washer can't drop off . . . every nut is certain to be locked tight.

SEND FOR YOUR FREE KIT OF KEPS TESTING SAMPLES TODAY!

SHAKEPROOF®

"Fastening Headquarters"

Division of Illinois Tool Works
St. Charles Road, Elgin, Illinois

If you write maker identify as IEN-13462

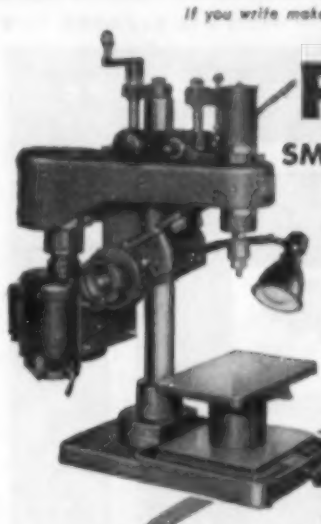
5413

PRECISION

SMALL HOLE DRILLING

Should always be done on the

HAMILTON VARIMATIC®



STURDY
BENCH TYPE
VARIABLE SPEED
SUPER SENSITIVE
PRECISE

For complete information write for our FREE Bulletin No. 5413. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

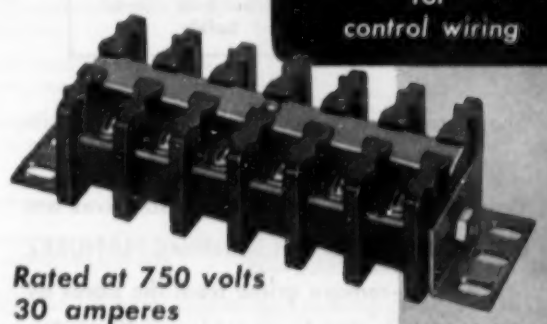
IT'S A **Hamilton Tool**

USE IT WITH CONFIDENCE

If you write maker identify as IEN-13463

Curtis Terminal Blocks Make Better Connections Economically—Quickly. A type for every purpose.

CURTIS Type "BT" Terminal Blocks for control wiring



Rated at 750 volts 30 amperes

The Curtis Type "BT" Block is a general all-purpose built-up unit providing orderly, simplified wiring for most control type circuits. Of unit design, the "BT" is available with any number of terminals from 1 to 30 per block. Each terminal bar is provided with a screw connection at both ends. A white marker strip is furnished for easy circuit identification. Also available is the "BS" with combination screw and solder terminals.

Write for Bulletin DS-110. Also, ask about wide selection of other Curtis Blocks.

CURTIS DEVELOPMENT & MFG. CO.

3214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN-13464

DIAMOND DRESSING TOOLS ARE VALUABLE—INCREASE THEIR LIFE WITH

DIAMOND-MISER

Hydraulically operated, completely automatic diamond tool index.

Wheel Trueing Hydraulic Diamond-Miser operates from hydraulic system of machine; provides precise diamond indexing and hydraulic accuracy of operation. Greatly extends diamond life by eliminating common causes of diamond spoilage and waste. Available for centerless, cam, crank and universal grinders, single or multiple wheel mounts.

Send for Informative Book and Price List.

WHEEL TRUEING TOOL COMPANY

46-3300 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as IEN - 13465

Here's YOUR answer to small traction problems.
May be used to operate keyboards, light springs, control board signal flags, and door latches. Conventional design.
Wide range of d. c. voltages. Self-lubricating Nylon bobbin. Side leads.
Design variations available to meet YOUR specific problems.
Write TODAY for full information!

CANNON PLUGS

Please Refer to Dept. 112
CANNON ELECTRIC COMPANY, 3209 Humboldt St., Los Angeles, California
Factories in Los Angeles; East Haven; Toronto, Canada; London, England.
Representatives and distributors in all principal cities.

If you write maker identify as IEN - 13466

HANDEEZ

The Hand Cleaning Compound That Removes Ground-in Grime Gently and Safely

Shop grime works deeply into pores . . . its residue is a contributory factor in dermatitis. Tiny skin cuts caused by harsh abrasives are entering points for skin infections. HANDEEZ *lifts* hard-to-remove grime from the pores by means of a sterilized vegetable emollient. The result: clean, smooth skin, even where cutting oils and other stubborn shop grime are present. HANDEEZ is ideal for both shop and office use.

Write for literature, or see your Dolge Service Man

FOR **FREE SANITARY SURVEY** OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

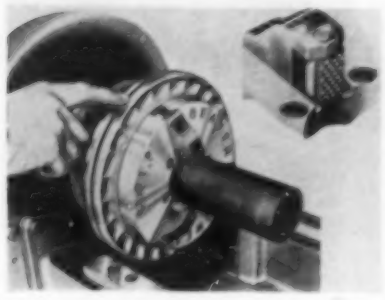
Dependable **DOLGE**
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 13467

If you write maker identify as IEN - 13468

Threading - Hand operated chuck mounts in pipe machine, 1/8 to 2 inch

Source: BEAVER PIPE TOOLS INC.
324 Dana St. N.E., Dept. IEN, Warren, Ohio



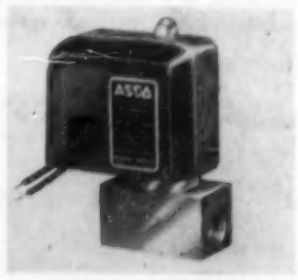
No effort required

This new chuck is brought to approximate size for a given pipe by lightly gripping the indented rim. Roller grip jaws tighten themselves on the work when power is turned on. The chuck will not lock, cannot slip or crush pipe or tubing. It will not mar soft materials or skin the operator's knckles. It holds in both forward and reverse directions. The roller grip jaws can be removed and inserted without dismantling the housing.

If you write maker identify as IEN - 13469

Valve - Two-way solenoid design for corrosive fluids, to 250 pounds

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.

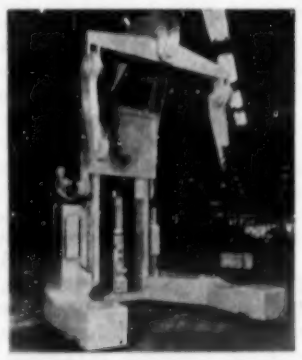


Bulletin 8265

Stainless steel is employed in the body of this new valve and in the interior trim to handle liquids generally corrosive to bronze, iron or steel at pressures up to 250 pounds. The valve is normally closed to open when its solenoid circuit is completed. Internal parts are accessible without removing the valve from the pipe line. The interior can be sterilized after removing the bonnet.

The coil is rated for continuous duty to 212 deg. F. High temperature coils can be supplied to 450 deg. F. Pipe connections measure ⅜ inch. Solenoid enclosures can be specified to meet NEMA standards in water tight assembly.

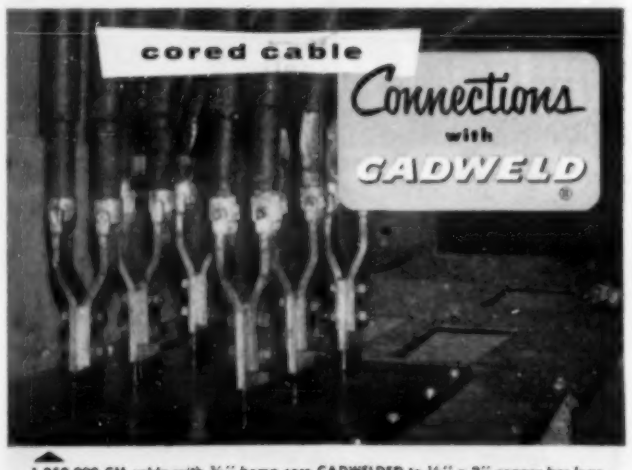
If you write maker identify as IEN - 13470



Ladles of molten aluminum, for a total load weight of 10 ton, are transported from furnace to pouring stations by this new Yale truck. **Drive is by a** diesel electric unit that provides electric power for the drive and hoist operations. Dual controls are **located on** the right and the left hand side for operator visibility. Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa., built the truck for the specified use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13471



1,250,000 CM cable with ¾" hemp core CADWELDED to ½" x 2" copper bar lugs at the Ashtabula power plant of The Cleveland Electric Illuminating Company.

CADWELD CONNECTIONS are the best on any type of cored cable because:

1 They do not require mechanical pressure for contact.
2 They cannot loosen or corrode.
3 They have greater current carrying capacity—keeps connections operating cooler than the cable.
4 They are compact—simplifies reinsulation.

for the best in ELECTRICAL CONNECTIONS

The Current Trend IS **CADWELD**
ERICO PRODUCTS, INC.
5070 S. 61st PLACE CLEVELAND 2, OHIO

If you write maker identify as IEN - 13472

Do You Have ADDITIONAL COMPRESSED AIR CAPACITY in Your 1955 Budget?

A SCHRAMM self-contained air compressor outfit for each department, or center of use, will save you money in:

First Cost: very small floor space occupied
no foundation necessary
no erection cost

Maintenance: built-in pressure lubrication insures long life
no daily filling lubricators
low electric bills—operation only when compressed air is being used
Moisture-free air

Write for free copy of
"Do Plant Air Systems Need a New Look"

SCHRAMM, INC.
WEST CHESTER PENNSYLVANIA

SCHRAMMAIR YOUR JOBS

If you write maker identify as IEN - 13473

MAKE YOUR OWN
ADJUSTABLE SCAFFOLDS and MATERIAL RACKS

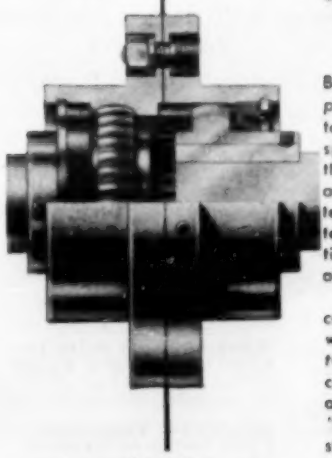
WITH
AMIDON FITTINGS

AND STANDARD PIPE
PICTURES AVAILABLE
AMIDON ENGINEERING CO.
ELYRIA 14, OHIO

If you write maker identify as IEN - 13474

NOW A BETTER COUPLING

SPHEREFLEX



Send for new Catalog C-540.

Better, because it utilizes a *new principal of design*: the gear teeth are precision cut on a true spherical arc . . . and because the root of the gear teeth are also curved, there can be no interference between mating gear teeth, even when shaft deflections range up to 7° total misalignment.

The "Sphereflex" is a *stronger coupling*, because there is *always a full line of contact between mating teeth*, whether coupling is flexed or perfectly aligned. Size for size, the "Sphereflex" Coupling will withstand more deflection, greater torque, higher rotating speeds, and more sever shock-loading than comparable couplings. And remember, they cost no more than other good quality couplings.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN-13475

illinois

FLOAT AND THERMOSTATIC TRAPS

SERIES G

They're different!

- in construction
- in performance

Recommended Applications... **Ventilating Units, Unit Heaters, Pre-Heaters, Re-Heaters, Process Heaters, Hot Water Generators, Drips of Mains and Risers.**

They operate under vacuum with the same high efficiency as under pressure. The snap-action condensate control valve provides complete and instantaneous drainage. A separate thermostatically controlled valve in cover vents air in large volume, yet prevents loss of valuable steam. Illinois traps function perfectly at all load conditions with lower return line temperatures than ordinary type traps. Straight through connections. Trap easily opened. Not damaged by freezing. Sizes from ¾ inch to 2 inches.

Write for Bulletin

ILLINOIS ENGINEERING COMPANY

2037 SOUTH RACINE AVENUE, CHICAGO 8

DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN-13476

Eliminate costly hazards to men and equipment . . .

KIRK KEY INTERLOCK *System*

KIRK KEY INTERLOCK Systems provide a pre-determined sequence of operation to prevent "mental lapse" which might cause damage to men and equipment.

Shown above is a typical installation on electrical switchgear equipment. Cubicle door is interlocked (lock "B") with switch operating handle to prevent opening of door when switch (locked by "A") is closed and in service. Only when switch handle is locked open by "A" can the same key be used to release the lock "B" on the cubicle door. Operating handle can not be closed until cubicle has been locked closed and the key utilized to release lock "A".

Type B
Base Mounting

Type F
Flat Mounting

Type D
Detachable Latch

This is only one of the many Kirk Key Interlock arrangements available for use in electrical, mechanical and processing applications.

Write today for Bulletin No. 1725.

R&IE EQUIPMENT DIVISION

I-T-E CIRCUIT BREAKER CO.

KERR ST. GREENSBURG, PA.

If you write maker identify as IEN-13478

Drilling - Magnet stand to mount and feed a portable drill

Source: BUCK MFG. COMPANY
100 Cypress Ave., Dept. IEN, Los Gatos, Calif.

Electro-magnet

Holding "pull" of the magnet in the base of this new Bux Model L-2 stand is about 800 pounds. Weight of the assembly, without a drill, is 34 pounds. Pull is sufficient to hold the stand and drill on a structural member or a ferrous metal surface to drill a ¾-in. hole. Capacity increases to 1¼ in. in steel when a pilot hole, ⅜ in. in diameter, is drilled initially into the surface of the work.

The stand assembly includes an outrigger arm with an adjustable compression pin that minimizes tilting action on the base. Operation is on 110-volt ac. or dc.

If you write maker identify as IEN-13479

Welding - Bronze arc electrode for application on bronze and brass

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

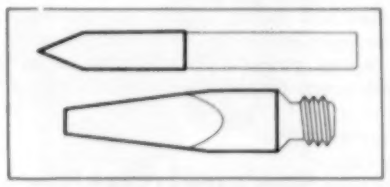
Technical data upon request

Mang-Trode is a new coated manganese bronze electrode. It is available in four sizes measuring ⅛ to ¼ inch. It is packaged in standard 50-lb. cartons. No excessive pre-heating is required. Deposit composition, mechanical properties and color match those of manganese bronze. The welding operates at relatively high current density on reverse dc. polarity. Arc action is smooth and spatter losses are negligible.

If you write maker identify as IEN-13480

Soldering - Alloy coated tips for company's line of electric irons

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Dept. IEN, Roselle Park, N. J.



Details upon request

Hexclad trade names a new line of copper tips on which the exposed surfaces have been coated with an iron alloy to resist wear. The portion of the plug tip that inserts in the iron also carries a thin coating to protect the copper but not to interfere with good heat transfer.

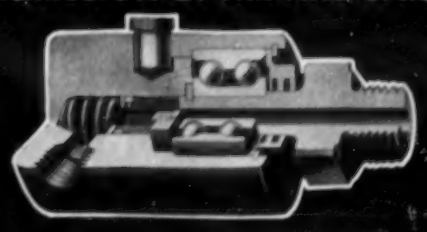
The new tips retain their original shape. They require no filing or dressing. They are available from stock for each of the company's forty types of iron to supplement the standard Tellurium copper corrosion resistant tips.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13481

FAWICK ROTORSEAL

PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN-13482

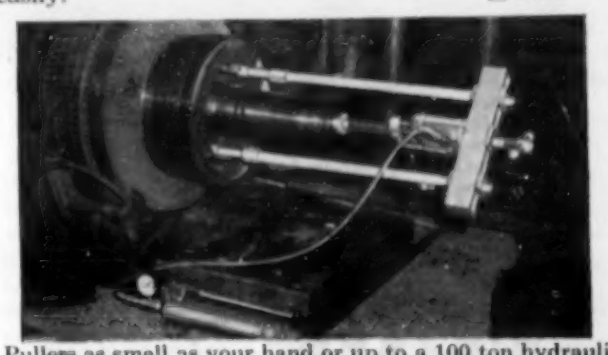
WHAT ARE YOU TRYING TO PULL?

Important information that will help save time, parts and tools on every job

- ☐ GEAR
- ☐ BEARING
- ☐ PINION
- ☐ KING PIN
- ☐ COUPLING
- ☐ WHEEL
- ☐ PULLEY
- ☐ SLEEVE
- ☐ HOUSING
- ☐ SHEAVE
- ☐ RACE
- ☐ AXLE
- ☐ SHAFT
- ☐ COLLAR
- ☐ OTHER

Pulling and installing jobs are in many cases an unnecessary headache. Without proper tools, expensive parts and equipment are broken and machinery is down for long periods of time.

This is unnecessary for there are inexpensive and practical pulling tools to do every job quickly and safely. Check the jobs shown here. We can help you by suggesting the right tool for the right job and telling you how to do it easily.



Pullers as small as your hand or up to a 100 ton hydraulically operated tool are available to you in the OTC line. Here a 50 ton OTC hydraulic ram is removing a rotor and armature from a motor generator shaft. Get the answers to your pulling problems by writing OWATONNA TOOL COMPANY, 371 Cedar St., Owatonna, Minn.

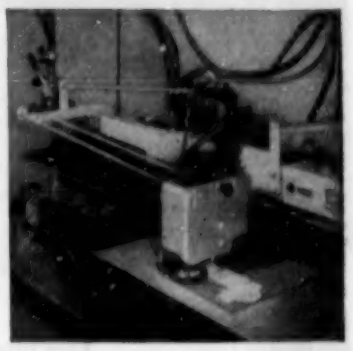
If you write maker identify as IEN-13483

SIMPLIFY Your Shape-Cutting Jobs with the...

OXWELD Automatic Tracer

Trade-Mark

- Positive templet contact... electronic steering control ... maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls ... simple to operate



With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-8086.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN-13484

Lightweight FIREBRICK CUT OUR FUEL COSTS 26%

And that's not all! This user, who relined his annealing furnace with B&W *lightweight* Insulating Firebrick practically doubled his furnace output.

What's the story behind the remarkable performance of B&W IFB?

Lightweight B&W IFB mean that you have millions of tiny, insulating air cells in your furnace walls—keeping the heat inside your furnace where it can work for you. And because B&W IFB store and conduct less heat, they reduce heating up time and respond quickly to temperature changes, assuring excellent temperature control.

Get all the facts from your B&W Refractories Engineer. Offices in principal cities.

THE BABCOCK & WILCOX CO.

Refractories Division

General Offices: 161 East 42nd St., New York 17, N. Y.

Works: Augusta, Ga.

R-809

If you write maker identify as IEN - 13485

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather...preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.

CAPCO

Write for literature and name of nearest distributor.

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

If you write maker identify as IEN - 13486

Model 218

This idea may sound far fetched — but it's straight facts that the clean plant, shop or office will have the best chance of landing defense orders.

Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 13487

Check with FAIRFIELD for PINION GEARS

- ✓ TOP QUALITY
- ✓ MASS PRODUCTION ECONOMY
- ✓ DEPENDABLE SERVICE
- ✓ UNEXCELLED FACILITIES
- ✓ ENGINEERING RECOMMENDATIONS

Fine Gears Made to Order:
SPIRAL BEVEL
STRAIGHT BEVEL
HYPOID
HERRINGBONE
HELICAL
DIFFERENTIALS
SPUR
WORMS AND WORM GEARS

MASS production of fine gears is an accomplishment that requires the ultimate in manufacturing facilities and experience. And it's all here at Fairfield—metallurgical department, batteries of the most modern machines, complete heat treating equipment, all operated by skilled craftsmen producing truly fine gears. Here is more than 30 years of experience translated into the gear-making "know-how" that is essential to manufacturing high quality, dependable gears.

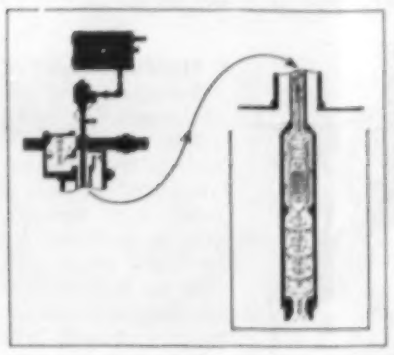
Our facilities are complete for producing gears for a wide variety of applications. Why not consult Fairfield on your next gear problem? Your inquiry will receive prompt attention.

FAIRFIELD MANUFACTURING CO.
2333 S. Concord Road Lafayette, Indiana

If you write maker identify as IEN - 13488

Pump - Multiple stage turbine to deliver gasoline from storage

Source: JOHN WOOD COMPANY
Broadway, Dept. IEN, Muskegon Heights, Mich.



For gasoline

Three turbine type impellers are mounted on a common shaft above a foot valve in the housing of this new Ram submerged pump. Above them is a sealed explosion-proof motor submerged in oil. The motor is suspended from a conduit through which electrical connections are brought out to the surface for termination in a control housing accessible for servicing.

The pump is designed for installation in an underground gasoline storage tank to deliver to a manifold serving as many as eight gasoline dispensers involving high lifts, long lines or high temperatures. Motor control operates remotely from each dispenser to meet demand.

If you write maker identify as IEN - 13489

Welding - AC arc machine in three ratings from 300 to 500 amperes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Bulletin GEC-1259

Stepless current adjustment is obtained in this new Series 6WKL welding machine by raising and lowering the primary coil. Movement is accomplished by turning a crank on the housing top. Adjustment is indicated on a current scale on the housing face. Smallest of the three new machines can be set between 38 and 375 amperes. The largest one can be set between 65 and 625 amperes.

Construction includes silicone insulation, aluminum coil windings, rubber bushing support for the coil, arc stabilizing capacitors, power factor capacitors, primary switch, automatic idling control and an automatic hot start to provide an extra surge of current when an arc is struck. A louver canopy protects the machine in outdoor applications. Operation can be specified for 220/440 or for 550 volts.

If you write maker identify as IEN - 13490

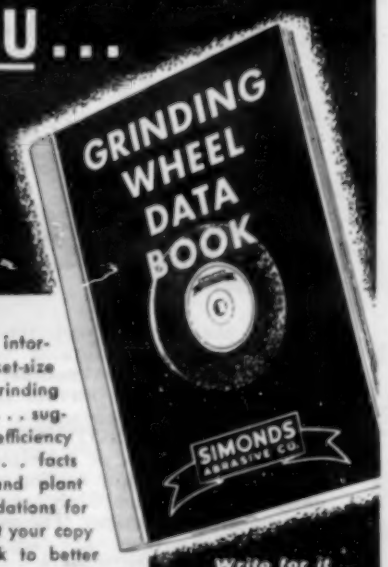
Linde Air Products Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y., reports on use of sapphire to measure furnace temperatures. Sapphire light pipes transmit light from within a furnace to an outside measuring device and thus permit temperature readings to be made without opening the furnace. The material has good strength at temperatures to 1,500 deg. C. It resists chemical corrosion.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13491

FREE data book for YOU...

all about grinding wheels

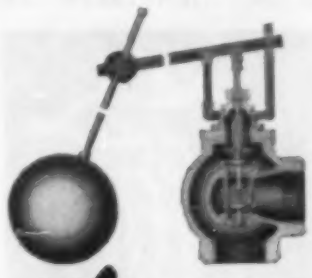


128 pages of helpful information in handy pocket-size book form. Includes grinding wheel selection tables . . . suggestions for production efficiency . . . speed charts . . . facts about Simonds job and plant surveys . . . recommendations for specific operations. Get your copy of this free guidebook to better grinding. Write.

Write for it TODAY

SIMONDS ABRASIVE CO., Philadelphia 37, Pa.
Division of Simonds Saw and Steel Co.
DISTRIBUTORS IN PRINCIPAL CITIES
BRANCH WAREHOUSES: BOSTON, DETROIT, CHICAGO, PORTLAND, SAN FRANCISCO

If you write maker identify as IEN - 13492



low cost liquid level control

Klipfel FLOAT VALVES

On the majority of liquid level control applications, there's no need for fancy electric-electronic set-ups. A simple float valve, correctly engineered for the particular service, does the job just as well, at lowest cost.

Klipfel Float Valves assure dependable, trouble-free service with a minimum of maintenance.

Write today for your copy of Klipfel Bulletin 349. It gives helpful type and size selection data and complete description of the wide range of Klipfel types, styles and sizes for every service.

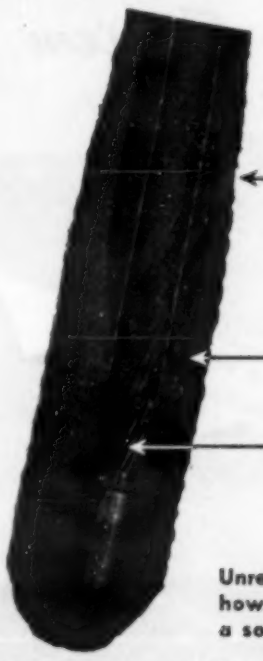
Klipfel VALVES, INC.
1072 LINCOLN AVENUE
HAMILTON, OHIO

Export Dept., 1010 Schaff Building, Philadelphia 2, Pa.

If you write maker identify as IEN - 13493

OKONITE RUBBER SPLICING TAPES

bond perfectly for a lasting splice



1. Okolite and Okoprene Tapes bond together perfectly.
2. No separate layers—Okolite Tape has fused into a solid mass of insulation.
3. Impression left by conductor strands shows absence of air pockets.

Unretouched photograph showing how Okonite Rubber Tapes fused into a solid, uniform wall of insulation.

There are no voids or separate layers in this section cut out of a splice in a 5-kv unshielded cable. The Okolite High Voltage Tape, applied over the conductor, is fused into a solid and completely uniform layer of insulation. It is ozone- and moisture-resistant and has high dielectric strength, high insulation resistance and excellent aging properties.

Nor is there any separation between the Okoprene Tape, which replaces the sheath, and the Okolite Tape. Okoprene Tape supplies the same tough weather, oil, acid, and heat resistance given by the neoprene sheath. Okonite's instruction sheets, IE-5678, supply valuable information on the techniques of making better splices. For a set, write today to the manufacturer, The Okonite Company, Passaic, N. J.

AVAILABLE THROUGH AUTHORIZED DISTRIBUTORS ONLY.

If you write maker identify as IEN-13495

More and more manufacturers are installing Leesona Take-Up Machines to traverse-wind their products for sales-boosting neatness.

New bulletin tells you how up-to-the-minute Leesona Take-Up Machines wind directly from your production equipment or furnishing device, saving you time, work and money, while improving the appearance and convenience of your product — *and eliminating rewinding.*

If your product is traverse-wound on to spools, tubes or cones, it will pay you to send for the bulletin *"Precision-Wound Packages."*

UNIVERSAL WINDING COMPANY
P. O. Box 1605, Providence 1, R. I.
Boston • Philadelphia • Utica • Charlotte
Atlanta • Chicago • Los Angeles
Montreal and Hamilton, Canada

If you write maker identify as IEN-13496

ELCO

*Specials

FOR EXAMPLE

This stainless steel part was formerly made by another method of manufacturing. By using the Cold Heading method to produce this part, a savings of $46.15 per thousand was realized by the customer.

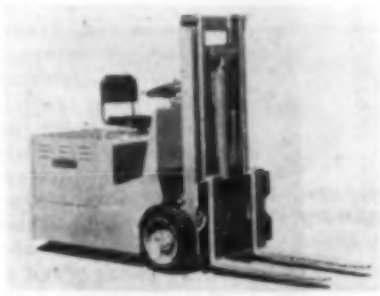
OVER 30 YEARS EXPERIENCE MAKING SPECIALS AND STANDARDS

ELCO TOOL AND SCREW CORPORATION
1956 BROADWAY • ROCKFORD, ILLINOIS

If you write maker identify as IEN-13498

Truck - Electric fork lift design rates 3 ton on 48 in. load length

Source: MERCURY MFG. COMPANY
4044 S. Halsted St., Dept. IEN, Chicago 9, Ill.



Hydraulic lift, motor travel

The operator rides in seated position on this new Yank Model 630 truck. Controls are grouped at his position for four speeds in forward and reverse to a maximum of 5¼ mph. with a full load at 6¼ mph. free. Hoisting speed is 22 fpm. with a full load and 34 fpm. free. Lowering speed in both loaded and unloaded cases is at 45 fpm.

The forks tilt 4 deg. forward and 10 deg. to rear. They can be lifted to a maximum elevation of 115 inches. Truck height, with the uprights collapsed, is 83 inches. The truck will operate in 73-in. intersecting aisles with 36-in fork length. Turning radius is 11½ feet.

Wheel base measures 54 inches. Overall length, with 36-in. forks, is 125 inches. Width is 42 inches. The forks are adjustable in width between 10 and 38 inches. Equipment includes magnetic contactor control with timed acceleration and controlled plugging, valve lever operated switches to actuate magnetic contactors in the pump motor circuit for hoist and tilt, series wound ball bearing traction type travel and pump motors with the travel motor connected by a double universal joint to the drive for easy removal and self alignment.

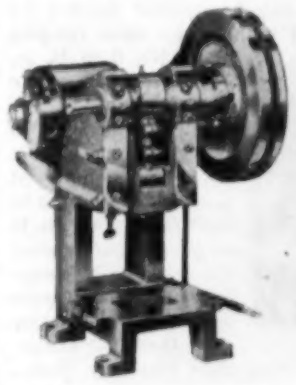
The drive axle is a double reduction spiral bevel and spur gear unit with ball and Timken roller bearings and full floating drive shafts. The trail axle is a controlled caster type with wheels and fork posts on Timken bearings and arrangement to provide stable movement over uneven floor surfaces. The load wheel rims and their solid rubber tires are quickly replaceable.

The operator's seat is fitted with a cushion and back rest. A built in step well assists in easy mounting and dismounting. Alemite Accumeter centralized lubrication can be specified.

If you write maker identify as IEN-13499

Press - Open back mechanical mounts on bench, provides 2 ton rating

Source: ALVA F. ALLEN
1001 N. 3rd St., Dept. IEN, Clinton, Mo.



Literature on request

Stroke measures ¾ in. and ram adjustment is the same amount of this new 2-ton press. It supplements the smaller 1-ton unit, previously described IEN-8705-54. It is designed for belt connection to a motor, supplied by the user, to mount on a plate at the rear. Continuous operation can be maintained to 200 strokes per minute. Single stroke action is by means of a lever-operated single-pin clutch. Weight is 105 pounds. List price without the motor is $97.50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13500

THIS BOOKLET CAN OPEN A DOOR FOR YOU!

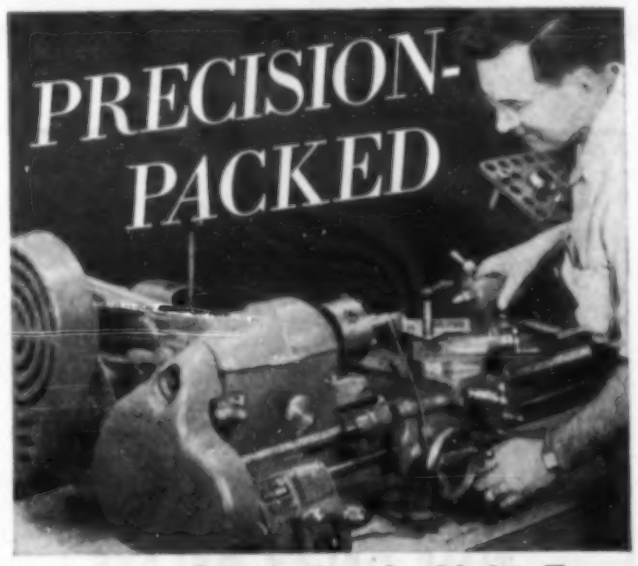
...a door to faster production—easier fabrication—cost savings in your plant. This informative, fully illustrated booklet describes the whole range of Tufflex cellulose felted fibers for cushioning—protective padding—sound absorption—thermal insulation—and many other uses. It tells why Tufflex, available in many different types—is finding new jobs every day in American industry. Send now for your free copy of "The Expanding Miracle of Tufflex"—there's no obligation. Wood Conversion Company, Dept. 126-124 First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON **TUFFLEX***

Guaranteed by Good Housekeeping

*Reg. U. S. Pat. Off.

If you write maker identify as IEN-13501



South Bend Light Ten Lathe

Here's precision packed into the ideal machine tool for machining small to medium-sized parts. Compact and sturdy, the South Bend Light Ten Lathe will help you meet your production schedules with economy and ease. Base price $500.

Compared with our costs OUR PRICES ARE LOWER than they were back in 1941

Prices are closely tied to costs. Costs are still rising. Buy now before increased costs necessitate higher prices.

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN-13502

Veeder-Root VARY-TALLY COUNTERS available ...via Graybar

For accurate numerical breakdowns of parts, portions, products, people, money—*anything* countable—keep a Vary-Tally counter at your fingertips. This quality-made multi-unit counter is ideal in every industrial and business use. Individual tag windows can be marked with the descriptive legend of your choice. Bold figures are readable from every angle, never covered by fingers in operation. Easily portable. Constructed for hard use and long wear.

SEND FOR THIS FREE BULLETIN

The Vary-Tally Multiple-Unit Reset Counter bulletin is yours for the asking. It provides detailed information on how the counter operates and who can use it most profitably. Contact your nearby Graybar Representative. Or write: Graybar Electric Co., Inc., 420 Lexington Avenue, New York 17, New York. 466-1212

Call Graybar *first* for . . .

Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN-13503

INSULATED WIRE LEADS FINISHED AUTOMATICALLY

ARTOS CS-6 MACHINE:

- *Completes 3000 per hour*
- *Strips one or both ends*
- *Takes all types of wire*

YOU'LL PRODUCE uniform, perfect wire leads at high speed on this automatic machine.

In 15-in. lengths, you can get 3000 leads per hour . . . accurately measured and cut . . . stripped at one or both ends up to 1½ in. Other lengths in proportion.

Unskilled help can operate machine. Spoilage is almost eliminated—there's no nicking of solid wire or cutting of strands. Set-up is easy for different wire lengths and types.

WRITE FOR BULLETIN
Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping
ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN-13504

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-122

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN-13505

AURAND

CLEANING TOOLS
ELECTRIC OR PNEUMATIC

Zip away **SCALE RUST PAINT**

Powerful rotary chipping action completely removes stubborn accumulations from iron, steel, brick, concrete, etc. with less effort. Adjustable depth shoe for controlling depth of cut. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

Write Dept. 649 for the money-saving facts.

AURAND MFG. & EQUIP. CO.
2643 Colerain Ave. • Cincinnati 14, Ohio

If you write maker identify as IEN-13506

The "MASTER COMPAR"

INDICATING MICROMETER COMPARATOR

has the VISIBLE feel

No Arguments as to correctness of reading due to "feel". Use it as Comparator, Master Micrometer, Go & No Go Gage. 1" Range reading in 1/10,000"

To attain permanent accuracy at these close limits, highest precision workmanship and exclusive design of mechanism are of Major Importance and ONLY found in "MASTER COMPAR".

0-1" SIZE IN HARDWOOD CASE $95.00
Also Available in LARGER SIZES

A RIGHT HAND TOOL
Release button for movable Anvil on RIGHT Hand side enables you to hold tool the conventional way.

NEW—
Resetting to Zero in 5 seconds
Quick adjustable tolerance bands.
Heavy TUNGSTEN CARBIDE Anvils will actually measure Out-of-Roundness, Ovalness & Taper.

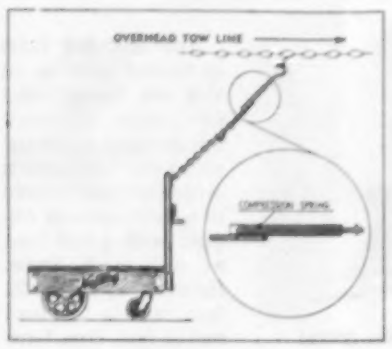
Ask for Illustrated Circular — Code GIOFF
Sold thru Tool Supply Houses
Ask for Demonstration

GEO. SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE STREET • NEW YORK 12, N.Y.

If you write maker identify as IEN-13507

Truck - Four wheel platform design with shock absorbing towline hitch

Source: NUTTING TRUCK & CASTER CO.
1201 W. Division St., Dept. IEN, Faribault, Minn.



Bulletin 54-TL

A new connector has been developed for the company's line of platform trailer trucks to operate in connection with an overhead power driven towline. A compression spring in the hitch assembly absorbs shock when a stationary truck is connected to the moving line or when the truck strikes a floor obstruction. The truck is available in capacities to 3,800 pounds. It is fitted with 12-in. main wheels and with 6 or 8-in. casters. Platform sizes range from 36 by 48 in. to 36 by 72 inches. Height is 14 in. in each case.

If you write maker identify as IEN-13508

Capacitor - Miniature electrolytic for low voltage electronic circuits

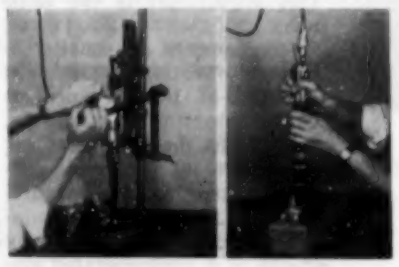
Source: SPRAGUE ELECTRIC CO.
165 Marshall St., Dept. IEN, North Adams, Mass.

Bulletin 352

Tantalex trade names this new capacitor. It measures 1/8 in. in diameter by 9/16 in. in length. It is particularly suited for by-pass, coupling and filter applications in low voltage transistor circuits. Operating temperature range is from minus 20 to plus 65 deg. C. Resistance to attack by humidity is excellent. Tantalum is employed as the anode.

If you write maker identify as IEN-13509

Heli-Coil wire thread inserts can be applied quickly by means of a new power tool that will handle sizes ranging from No. 6 to 1/4 in. in National coarse and fine threads. The tool is available in pneumatic or electric design. It is employed portably or is held in stationary position. It is particularly suited for large scale installation of the inserts as on a production line. Heli-Coil Corporation, 1467 Shelter Rock Lane, Dept. IEN, Danbury, Conn., is the source.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13510

the most widely used Electronic Supply Guide

free send for it

ALLIED'S

COMPLETE 308-PAGE
1955 CATALOG

your guide to the world's largest stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed *all* your purchasing of electronic supplies and equipment. Send your orders to us for fast shipment from the world's largest stocks of electron tubes (all types), test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.). Our expert Industrial supply service saves you time, effort and money. Send today for your FREE 1955 ALLIED Catalog—the *complete* up-to-date guide to the world's largest stocks of quality Electronic supplies for Industrial use.

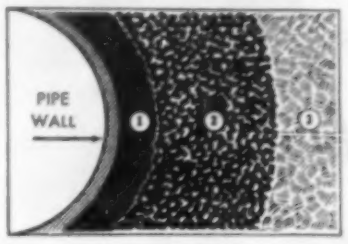
One complete dependable source for everything in electronics

ALLIED RADIO
100 N. Western Ave., Dept. 14-M-4
Chicago 80, Illinois

If you write maker identify as IEN-13511

GILSULATE®

the modern Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as IEN-13512

NOW...ONE ADHESIVE INSTEAD OF SEVERAL...

for:
- Laminating
- Tube Winding
- Case Sealing
- Spot and Straight Line Carton Gluing
- Seam Sealing of Bags and Boxes

Up to now you may have needed several types of adhesives for these jobs. Now you need just one—FULLER'S 545. FULLER'S 545 is a water-resistant resin adhesive designed for a *variety* of uses. It's versatile, and it's low in cost!

SEND FOR FREE FOLDER containing technical information and tips on the uses of Fuller's 545 in your factory.

fuller's 545 ADHESIVE

H. B. FULLER COMPANY
General Offices: 181 W. Kellogg Blvd., St. Paul 2, Minnesota

If you write maker identify as IEN-13513

PROTECT EXTERIOR MASONRY WALLS

STOP WATER PENETRATION WITH THIS

SILICONE WATER REPELLENT

Dehydratine No. 22 provides an easy, low-cost way to keep water out of masonry walls. This colorless, silicone water repellent protects against water damage inside and out, without changing the appearance of your structure. Dehydratine No. 22 minimizes efflorescence and prevents discoloration. You simply spray or brush it on. Write for complete information. Address Dept. H10-1267.

A Subsidiary of Sun *Chemical Corporation*

A. C. Horn Co., Inc.
Long Island City 1, N. Y.

If you write maker identify as IEN-13514

Pre-Set Control

with this APCO MOSSBERG T-Handle Torque Wrench

There's no chance for costly errors with Apco Mossberg T-Handle Torque Wrenches. They are pre-set at the factory to any torque you desire, from 8 to 40 inch pounds. When torque limit is reached, wrench clicks and will not torque beyond this predetermined load.

Get the facts on Apco Mossberg's complete line of torque tools designed to meet industrial and military requirements. Apco Mossberg Company, 171 Lamb Street, Attleboro, Massachusetts.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN-13515

4 ways to cut compressed air costs

with an investment of only $9.20*
*for a standard ⅛", ¼" or ⅜"

NORGREN PRESSURE REGULATOR with gauge

110 psi from air compressor

90 psi to air tool

Don't use an Air Tool at 110 psi line pressure when 90 psi of air gives you top efficiency

Here a Norgren Pressure Regulator would save around 180,000 cubic feet of free air per year on one air tool used 50% of the time.

90 psi from air compressor

50 psi to small 2" dia. air cylinder

Don't use 90 psi air pressure on Clamping Cylinders, Air Chucks, etc. when 50 psi usually works as well

Normal use of a 2" dia. cylinder with a 2" stroke at Norgren-regulated 50 psi pressure would save about 7000 cubic feet of free air per cylinder per year.

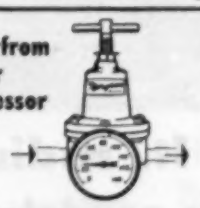
80 psi from air compressor

30 psi to aerosol bearing lubricator

Don't use line pressures of 80 psi for aerosol bearing lubrication when 30 psi does the job better

Recommended maximum pressure and flow are 30 psi and 2.8 cfm. A Norgren Regulator here could save approximately 450,000 cubic feet of free air per year per lubricator.

90 psi from air compressor



30 psi to blow gun

Don't use an Air Blow Gun at line pressure of 90 psi when 30 serves as well — and is safer

Here at the lower Norgren-regulated pressure of 30 psi you would save about 90,000 cubic feet of free air on one gun used an hour a day.

OTHER BIG ADVANTAGES of using the proper Norgren-regulated air pressures: **1** — less wear on your air equipment . . . **2** — money saved on maintenance costs.

WRITE FOR COMPLETE DATA

PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

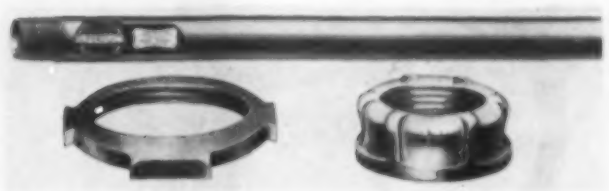
C. A. Norgren CO.
3432 So. Eliot, Englewood, Colo.

VALVES • FILTERS • REGULATORS • LUBRICATORS • HOSE ASSEMBLIES

If you write maker identify as IEN-13517

Conduit - Corrosion proofed steel, also new lugged bushing and locknut

Source: NATIONAL ELECTRIC PRODUCTS CORP.
140 Stanwix St., Dept. IEN, Pittsburgh 22, Pa.



Test details upon request

Superduct trade names heavy duty rigid steel conduit that has been galvanized and then coated with a vinyl based pigmented enamel inside and out. The conduit is designed for use where it will be subject to severe corrosive atmospheres.

Also announced by the company is a new ½-in. bushing with raised lugs for final setting with a screw driver and a smooth curved throat to protect wiring insulation against cutting or abrasion and a new ¾-in. Bondnut with lugs for tightening, also with a screw driver. The nut carries beveled bonding teeth on one side to cut into the metal wall of a panel or outlet box for grounding and to provide a vibration proof lock.

If you write maker identify as IEN-13518

Cleaning - Dry powder material for washing machine use on wiping rags

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

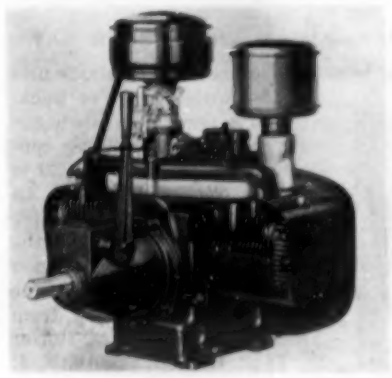
Scented with pine oil odor

Composition 75 is a new dry powder material, for solution in hot water in a washing machine, to clean heavy oil and grease from industrial wiping rags. The powder is added to the water in the ratio of 1 to 2 lb. per 100 lb. of work depending on the amount of soil in the rags. No other additives are required.

If you write maker identify as IEN-13519

Engine - Two cylinder gasoline, air cooled, 26.8 hp. at 3,600 rpm.

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.



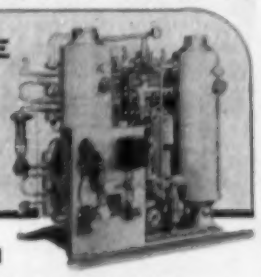
Heavy duty design

New assembly of Type K660 air cooled four-cycle engine employs an oil immersed lever operated clutch mounted on ball bearings. The opposed cylinder engine mounts a silencer type muffler, oil bath air cleaner, diaphragm fuel pump, oil pressure gage. Cooling air is directed over the cylinders to prevent over-heating.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13520

A LITTLE MOISTURE CAN BE A BIG PROBLEM



Get rid of it with a Pritchard HYDRYER!

It's simple to eliminate moisture problems that affect the accuracy or efficiency of your instrument installations or process controls. A Pritchard HYDRYER* is *the* efficient dehydration unit that you can depend on to do that job.

A standard packaged HYDRYER — completely factory assembled — provides long, trouble-free service for most drying jobs. For extreme conditions or special requirements, a custom unit can be readily adapted to your needs.

For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

*Registered Trade Name

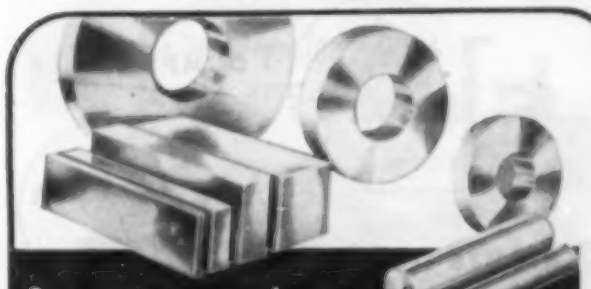
Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J. F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 373, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN-13521



Cut your scrap loss

Use AMPCO* Grade 24 dies to eliminate galling, loading

IF you are drawing or forming stainless consider this: One manufacturer cut his reject rate from 25% to less than 1% just by switching to Ampco Grade 24 dies. You can save too — here's why: Ampco Grade 24 dies eliminate loading, galling, scratches, die marks. They have little or no pickup. This means far longer runs without redressing.

Seventy-two sizes of Grade 24 die blanks are now available from stock *at new low prices*. They include centrifugally-cast rings, solid rounds, and rectangular shapes in commonly used sizes.

Don't take the brunt of high forming, drawing, or bending costs. Get full information on Grade 24 Die Blanks now. See your distributor or write Ampco, Milwaukee.

*Reg. U. S. Pat. Off.

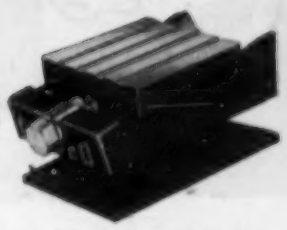
AMPCO D-25

Ampco Metal, Inc.
Dept. IE-12, Milwaukee 46, Wisconsin
West Coast Plant • Burbank, Calif.

If you write maker identify as IEN-13522

Improved Empco JACKS are stronger!

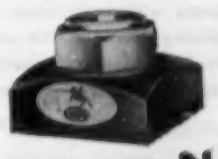
SAVE TIME SETTING UP AND LEVELING YOUR MACHINES WITH FAST, ACCURATE, SELF-ALIGNING LEVELERS!



Style JD Wedge type

You can meet hurry up demands for relocation of machinery quickly and easily with improved EMPCO JACKS. You just raise the machine enough to slip EMPCO JACKS under the base (the number depending on the size of the machine). Turn the adjusting screw up or down until the level indicator reads "zero," and the job's done.

To reduce vibration, VI-SORB mounting pads are available with each style EMPCO JACK. Write for specifications and prices today.



Style JS Screw type

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN-13523

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

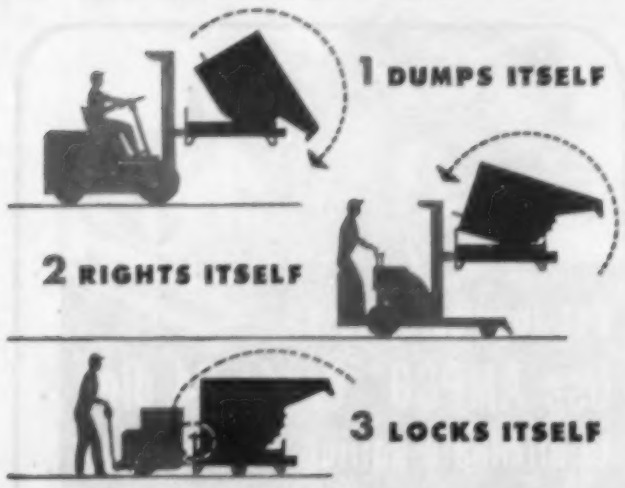
Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

K KELLER TOOLS

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
1329 Fulton St., GRAND HAVEN, MICH.

If you write maker identify as IEN - 13524



makes every truck a dump truck!

Fits securely on any standard fork or platform lift truck . . . can't slip off. Pick-up is quick and easy. Insures fast, efficient handling of any wet or dry, hot or cold bulk materials. *Cuts hand unloading by at least 50%* . . . with maximum safety.

This rugged Roura Self-Dumping Hopper is built like a battleship . . . extra heavy gauge welded construction . . . to withstand the terrific knocks and bangs of rough usage. Good for years of dependable service. Available in sizes from ½ to 2 cubic yards.

Thousands of these time-and-money-savers are now in use by America's biggest industries. Let us show you how they can help cut your costs, too. Write today for more information. ROURA IRON WORKS, INC. 1409 Woodland Ave., Detroit 11, Mich.

ROURA Self-Dumping HOPPER

If you write maker identify as IEN - 13525

LAMINATED SHIMS

SIMPLY PEEL FOR ADJUSTMENT

Shims of brass, steel or aluminum LAMINUM® look and act like solid metal but they peel off in .002" (or .003") layers.

Laminated shims provide great accuracy with easy, economical machining tolerances. This simple method of spacing adjustment reduces lathe time, eliminates standby machines. Adjustments in thousandths are made right at the job with a penknife. You eliminate the counting, stacking and mixing of ordinary shim procedure.

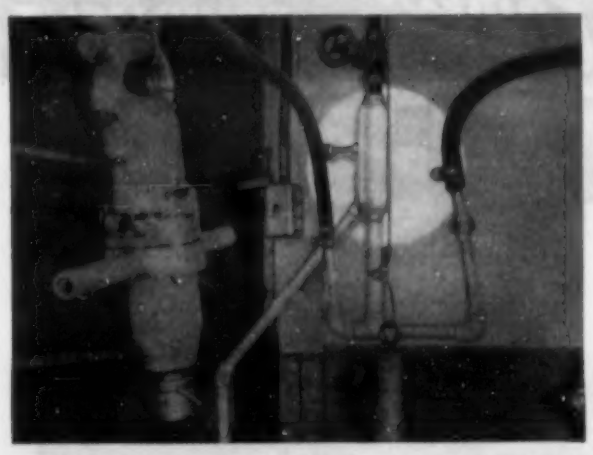
SEND TODAY for our Engineering Data File

LAMINATED SHIM COMPANY, INC.

2112 UNION ST., GLENBROOK, CONN.

If you write maker identify as IEN - 13526

THE NEW WAY TO HAVE DRY CLEAN AIR FOR AIR TOOLS!



NEEDS NO FILTERS — REQUIRES NO MAINTENANCE

Fully automatic, Hi-eF Purifiers installed on pipelines immediately ahead of air tools separate out all moisture, oil and liquid that condenses in transmission lines. They protect tools against rust, clogging and inefficient operation . . . have no costly, time-consuming filters to replace . . . *in fact require absolutely no maintenance!* Protect your air tools and other pneumatic equipment this modern trouble-free way.

FREE CATALOG write for Bulletin 501 on protecting pneumatic equipment

THE V. D. ANDERSON COMPANY
1966 West 96th Street • Cleveland 2, Ohio
Subsidiary of Chesapeake Industries Inc.

If you write maker identify as IEN - 13527

Thermometer - Bimetal design clips in place on a tube or pipe line

Source: PACIFIC TRANSDUCER CO.
11836 W. Pico Blvd., Dept. IEN, Los Angeles 64, Calif.

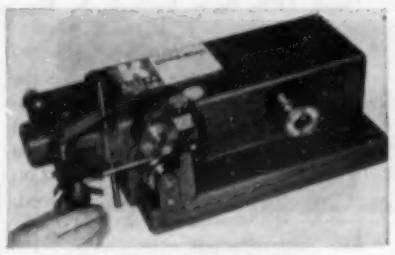
Copper cup protects element

Accuracy is within 2 deg. through the operating range of this new pipe Surface thermometer. Two available ranges are from minus 50 to plus 250 deg. F. and from 70 to 370 deg. F. Spring clips are made a part of the assembly to hold in place on a ½ to 2-in. pipe. The dial measures 2 in. in diameter. List price is $6.75.

If you write maker identify as IEN - 13528

Brazing - Pneumatic former rings work with braze or solder wire

Source: KELLER TOOL CO.
Parks St., Dept. IEN, Grand Haven, Mich.



For cylindrical work

A work piece, to be brazed or soldered, is positioned and pressed lightly against the work head of this new air operated bench type tool to actuate its forming mechanism. It applies a ring of brazing wire or soft solder on the work piece from a continuous roll feed and cuts the wire off. It can be set to form rings from ¼ to 3 in. in diameter. The work piece is ready for assembly and movement through the brazing or soldering operation as soon as it is removed from the new forming tool.

If you write maker identify as IEN - 13529

An assortment of wire joint connectors and terminals and an installation tool are packaged in a new Sta-kon kit for terminating and splicing conductors ranging from No. 20 to No. 10 AWG. The kit can be carried to the job. Connector installation is by staking the barrel on a wire end and then squeezing with the plier type tool. Kit price is $7.50 from Thomas & Betts Co., 60 Butler St., Dept. IEN, Elizabeth, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13530

HOW TO RESTORE CONCRETE FASTER, BETTER—AT LOWER COST!

BONDACTOR Concrete Gunning Equipment *Saves Money, Makes Money* on Nearly Any Maintenance Job

Bondactor concrete gunning equipment pays for itself many times over with labor-saving, cost-cutting performance on a wide variety of concrete restoration and maintenance jobs.

The Bondactor is used to repair column and beam encasements, ramps, loading docks, walkways, stairways, floors and other damaged or deteriorated concrete. Also used for fire-proofing, waterproofing and wet and dry sandblasting.

BEFORE, this loading dock was so badly damaged and deteriorated, it could hardly be used. Without a Bondactor, top slab would have to be removed, forms made and concrete poured.

AFTER applying concrete with the Bondactor. It's set and ready to go! No forms required, minimum cleaning. Gives a denser, stronger, long-wearing surface.

WRITE FOR INFORMATION!
Investigate Bondactor equipment today! State intended use.

Air Placement EQUIPMENT COMPANY
1006 West 24th Street
Kansas City 8, Missouri

If you write maker identify as IEN - 13531

for

• TOOL CRIBS • STOCK ROOMS • MACHINE SHOPS

Saves Time hunting through stacks of packaged drills. Compartments hold a gross of small sizes—a dozen or more of the larger ones. Raised letters on easy sliding drawers . . . hammerlin gray baked enamel finish . . . 14½"x7¼"x7¼".

Write for Circular
Model No. 1: Fractional drills 1/16" to ½"
Model No. 2: Number drills 1 to 60
Model No. 3: Letter drills A to Z

HUOT MFG. CO.
565 NORTH WHEELER STREET
ST. PAUL 4W • MINNESOTA
"HUOT is pronounced HEW-OT"

If you write maker identify as IEN - 13532

These CEC miniature precision instrument-type

pressure pickups

cover a wide performance range

PICKUP WITH PIPE ADAPTER

FLUSH MOUNTING DIAGRAM

Consolidated pressure pickups feature a-c or d-c excitation—full-scale pressure ranges from 5 to 5,000 PSI—linearity within 1%—negligible sensitivity to acceleration and vibration—wide temperature range from −65°F to +250°F—output 20 millivolts with 5-volt excitation—flush-type diaphragm as standard construction—stainless steel, corrosion-resistant construction—overload protection—high frequency response—variable-resistance types—calibration certificate with each pickup. Electrical principle is unbonded strain-gage windings connected in a four-arm bridge as the active element. Write for Bulletin CEC 1552-X9 and price list.

Pickup Type	*Range*	*Dimensions*
4-310 gage pressure pickup	5 to 250 PSI	0.5" diam. x 0.7"
4-311 gage pressure pickup	5 to 5,000 PSI	0.625" diam x 0.875"
4-312 absolute, differential, or gage pressure pickup	5 to 250 PSI	0.5" diam x 0.7"

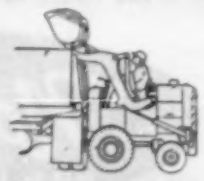
Consolidated Engineering CORPORATION
300 North Sierra Madre Villa, Pasadena 15, California

If you write maker identify as IEN - 13533

Turns in 6½ ft. radius in box car or gondola

Rear steering wheels of the Auto-Scoop make shortest turn (5" shorter than other scoop loaders with bucket in carry position). Auto-Scoop also travels up to 25% faster (to 13.88 mph in reverse, 7.66 forward) — shortens time on every trip. Single lever provides split-second forward-reverse shift. Many other advantages that bring production gains, cut costs. Write for Catalog L12-4.

20% more lifting capacity (1200 lbs.).



Higher clearance (6'8"), more reach (2'7").

JAEGER LOAD-PLUS auto-scoop 12 cu. ft.

1 cu. yd. Load-Plus available for bigger work.

THE JAEGER MACHINE COMPANY
614 Dublin Avenue—Columbus 16, Ohio

If you write maker identify as IEN-13534

TRI-LOK

Each Tri-Lok step consists of a panel of Rectangular, Diagonal, or U-type Tri-Lok flooring in any desired width, length, depth, and bar spacing.

SAFE—checker plate nosing bars make each step stand out clearly. Abrasive edging also available.

CLEAN—clogless, rivetless Tri-Lok joint prevents accumulation of dirt, moisture, rust.

STRONG—added strength provided at maximum load contact by shape and rigidity of nosing bar.

Write today for bulletin PK-1103

DRAVO CORPORATION
National Distributor for the Tri-Lok Company
Dravo Building, Pittsburgh 22, Pennsylvania
Sales Representatives in Principal Cities

If you write maker identify as IEN-13535

Approximately 2,000 gallons of aluminum paint were used on the interior of these Fort Worth, Texas, warehouses. At time of painting, warehouses were owned by Leonard Brothers Department Store. They are now owned by Service Life Insurance Co.
Aluminum Paint: 917 Brilliant Finish, Jones-Blair Paint Company, Dallas, Texas.

ALUMINUM PAINT BRIGHTENS INTERIOR OF FORT WORTH WAREHOUSES

Adequate lighting in warehouses is always a problem. But Leonard Brothers Department Store solved it two years ago by painting their huge warehouses with brilliant aluminum paint. Because of aluminum's outstanding light reflectivity, the formerly dark interiors are now bright and clean, and inventory control has been improved.

Aluminum paint's brightness and high reflectivity make it the ideal coating for industrial uses such as this, where good visibility is essential.

ALCOA does not make paint, but ALCOA Aluminum Pigments are used in more aluminum paints than any other brand. Special formulas have been developed by your paint manufacturer to solve individual problems. Paints made to these formulas actually cost you less, last longer, give utmost protection against heat, cold, sun, rain, smoke and fumes. Write us today for free booklet, *Painting With Aluminum.*

FREE BOOK
full of ideas you can use

Contains important information on proper application and selection of aluminum paint. Answers many industrial painting questions.

Write for your free copy today.

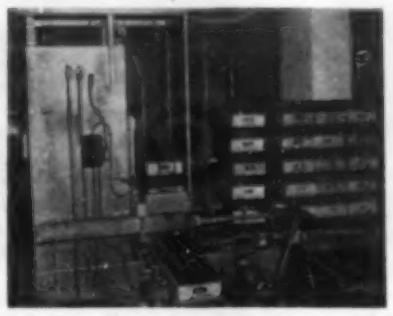
PAINT SERVICE BUREAU
ALUMINUM COMPANY OF AMERICA
1787-M Alcoa Building
Pittsburgh 19, Pa.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN-13537

Handling - Stacking machine loads and unloads bottle filled cases

Source: FOOD MACHINERY & CHEMICAL CORP.
3075 14th St., Dept. IEN, Riverside, Calif.



Automated action

Cases filled with bottles move into this new stacking machine on a conveyor to be loaded in orderly arrangement for safe fast handling on pallets. Also, by changing the controls, the machine can be employed to unload pallets back to the conveyor. In either case, operation is at the rate of about 1,000 cases per hour. The cases can be stacked in the loading operation to 4, 5, 6 or 7 in height and then are ejected as a stack to an accumulator. When three stacks have accumulated side by side an arm moves them to the pallet.

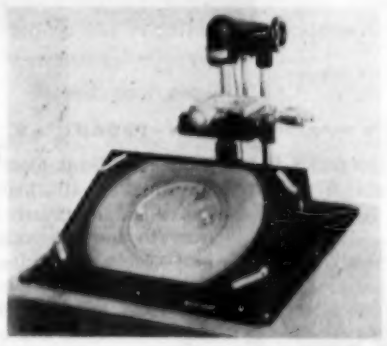
The arm returns and waits for three more stacks and then repeats its movement and the pallet, loaded with six stacks, is moved by roller conveyor to be picked up by a fork lift truck and moved to a storage area.

Empty pallets that have been placed in position by the truck operator are fed into the machine to receive their loads. Cases of empty bottles delivered to the machine on pallets can be unloaded and unstacked by setting the control switch. The cases then move from the pallet to the accumulator, three stacks at a time, by means of a hydraulically operated slider arm. The stacks move, one at a time, into the machine and the cases are unstacked from any height to seven high and are conveyed to a bottle washer. Machines that load only, or unload only, are available in addition to the dual purpose equipment.

If you write maker identify as IEN-13538

Gage - Optical comparator for readings accurate to 0.0001 inch

Source: GEORGE SCHERR OPTICAL TOOLS INC.
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Literature on request

Positioning range for the micrometer stage on this new Wilder Micro-Projector is 2 in. in longitudinal direction and 1½ in. in transverse direction. The stage is equipped with micrometer drums graduated directly to 0.0001 inch. Each micrometer provides for 1 in. of movement. The balance is obtained by gage block. Protractor charts, for angular measurements, read to 5 min. of arc.

A surface illuminator is provided to inspect parts such as stamps, metals, coins, watch plate dials. Seven magnifications are available between 10X and 100X. Most work parts can be placed flat on the stage without need for holding fixtures.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13539

WANTED!

. . . A CHALLENGE TO SOLVE YOUR FRICTION PROBLEMS

Aetna engineers and metallurgists are working constantly with equipment builders to improve their products. They specialize in hard-to-solve friction problems and hard-to-make ball and roller bearings and precision parts. Why not challenge them to solve YOUR next friction problem? Engineering analysis, recommendations and quotations without obligation.

AETNA BALL AND ROLLER BEARING COMPANY
DIVISION OF
PARKERSBURG-AETNA CORPORATION
4600 Schubert Avenue
Chicago 39, Illinois

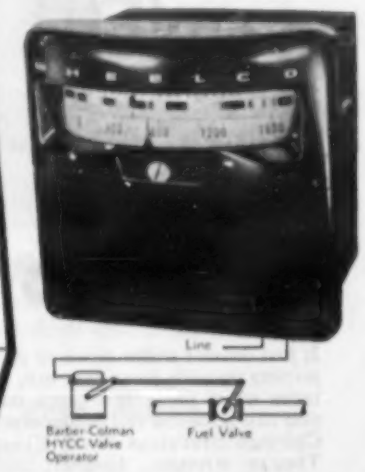
Aetna

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN-13540

NEW Wheelco Model 405 Capacitrol

Offers simpler low-cost proportioning control

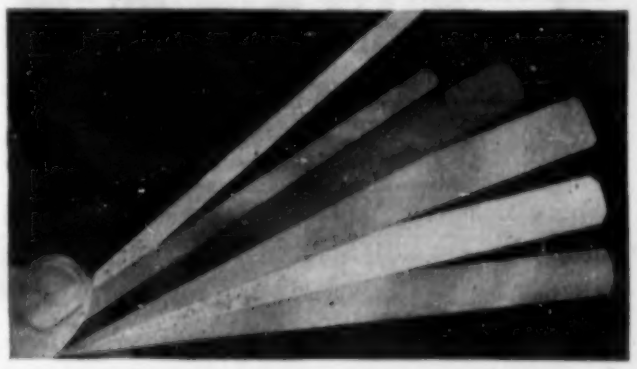


This *new* Wheelco Controller offers a greatly simplified, entirely non-mechanical system for maintaining true proportional relationship between fuel input and a continuously measured temperature . . . gives you faster, more accurate control over process variables. Features convenient manual "droop" correction and proportioning band adjustment, thermocouple break protection, fully "plug-in" construction, and many exclusive features never before combined in one, low-cost instrument. Bulletin F-6493.

WHEELCO INSTRUMENTS DIVISION
Barber-Colman Company, Dept. L, 1516 Rock St., Rockford, Illinois
Barber-Colman of Canada, Ltd., Toronto, Canada

If you write maker identify as IEN-13541

EXACTLY AS YOU WANT IT! NO MAKESHIFTS . . . NO DELAYS



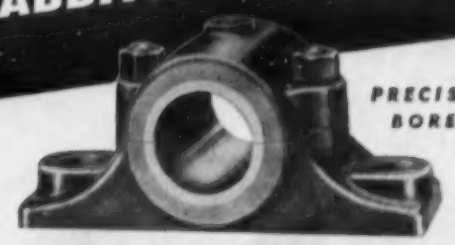
YOU CAN ALWAYS GET Roebling High Carbon Flat Spring Steel exactly as you want it . . . annealed, hard rolled untempered; scaleless tempered; tempered and polished, blued or strawed. Topping that, every inch of this product is dimensionally and mechanically uniform with every other. Result . . . it cuts down preparation time, machine stoppage and rejects.

Have your Roebling Field Man help you choose the flat spring steel—or the round, flat or shaped wire—that will help improve your product and speed up production. John A. Roebling's Sons Corporation, Trenton 2, N. J.

ROEBLING CF&I
Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as IEN-13542

DODGE BABBITTED BEARINGS



TRUE RUNNING!

DEPENDABLE!

● There's a *big* difference between a Dodge Journal Bearing and a common flat box—a difference that pays off in longer years of service, smoother operation, power savings! Dodge Journal Bearings are precision bored and faced—to insure maximum bearing surface for radial and thrust loads . . . Solid or Split Journal. Shaft sizes from 1/2" to 3-15/16". Stocked by Dodge distributors. Write us for full details.

DODGE MANUFACTURING CORPORATION, 888 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 13543

WITH

STAINLESS STEEL

CHICAGO FLOATS

It just doesn't make sense to go on putting up with floats that may collapse when for a few cents more you can have the full protection of Chicago Stainless Steel Floats. They're stronger, tougher, resist corrosion better, giving you many years of day-in day-out service. Wide range of shapes and sizes are available with many types of spud connections. Check with us today toward permanently ending your float worries.

Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

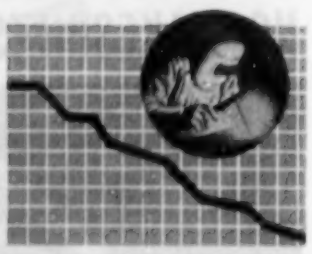
CHICAGO FLOAT WORKS

2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 13544

Stainless Fabrication:

UNIFORMITY OF WELD METAL REDUCES REJECTS



Reports from users indicate that Arcos Rods and Electrodes are lowering substantially the reject rate on many stainless welding jobs. An important factor in this time and money saving picture stems from Arcos quality controls in manufacture. The consistent uniformity of Arcos weld metal provides a sure stepping stone to improved welds. To get started, write today for "What Electrode Would You Use."

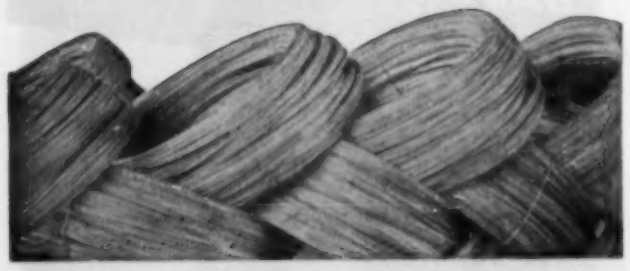
ARCOS CORPORATION

1500 South 50th St., Philadelphia 43, Pa.

If you write maker identify as IEN - 13545

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.



• The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 13546

Painting - Spraying machine for work positioned in a masking plate

Source: CONFORMING MATRIX CORP.
330 Toledo Factories Bldg., Dept. IEN, Toledo 2, Ohio

Paint area to 3 by 6 inches

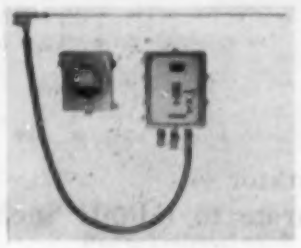
Work parts are positioned one at a time on an 8 by 4-in. masking plate on the housing top of this new machine and pressure is applied to depress the plate about ¼ inch. This movement starts the operation of an oscillating spray gun. It can be set to paint either a concave or a convex work surface.

The gun and its mechanism are enclosed in the machine housing which occupies a floor space measuring 34 by 30 inches. Overall height is 36 inches. A built-in exhaust outlet, 8 in. in diameter, removes air from the housing after it has been drawn across and under the top of the machine from the front. A mask washing device can be included. Over-spray collects in a sludge tray beneath the gun. Pipe fittings are on the back panel for air and paint lines.

If you write maker identify as IEN - 13547

Gage - Explosion proof electronic to indicate liquid or materials level

Source: ROBERTSHAW-FULTON CONTROLS CO.
2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.



Easily installed

NEC requirements are satisfied by this new explosion proof design of the company's Telstor electronic liquid or materials level gage. It is suited for installation in Class I Groups C and D atmospheres involving flammable gases or vapors and in Class II Groups E, F and G atmospheres involving combustible dusts.

The gage is a single tube electronic unit to measure mass or level of liquids, viscous fluids, powders, granular solids of conducting or non-conducting characteristics.

If you write maker identify as IEN - 13548

New attachment, for the fork lift truck built by Buda Company, 15401 S. Commercial St., Dept. IEN, Harvey, Ill., presents a horizontal ram to handle coils and reels of wire, metal strapping, paper rolls, metal and clay pipe. It is available in standard 36 and 48-in. lengths. It can be ordered in special lengths. It applies interchangeably with the forks on the truck.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13549

for a better grasp of any fastener problem - **Camloc**

QUARTER TURN FASTENERS

MEAN QUICK ACCESS. On panels doors or covers Camloc Fasteners provide positive locking by a quarter-turn with a screw driver or wing head. Vibration-proof, Camloc Quarter-Turn Fasteners cost less to install . . . minimize replacement . . . fewer do the job.

HEAVY DUTY LATCHES

SAFELY AND EASILY OPERATED. High shear-tension capacity . . . open and close under heavy loads . . . spring-loaded handle . . . retracting shear pin . . . positive locking.

SPECIAL PURPOSE FASTENERS

SUITED TO YOUR NEEDS. In the electronic, aircraft, machinery and other fields, leading equipment manufacturers are using Camloc-designed special fasteners for quicker accessibility.

Send for catalog or call us if you have a fastener problem.

Camloc FASTENER CORPORATION

24 Spring Valley Road, Paramus, N. J.

WEST COAST OFFICE: 5410 WILSHIRE BLVD., LOS ANGELES, CAL.

If you write maker identify as IEN - 13550

SPEED UP HAMMER AND TOOL OPERATIONS

Uses 6.5 cubic feet of air per minute at 80 p.s.i. Delivers from 0 to 13,000 completely controllable blows per minute as a result of Superior's exclusive metering trigger.

38 Tools Available For 150 Different Jobs

Each tool designed specifically for use with the Bantam Bully. Blank shanks available for new applications in your particular field.

Scaling Tools	Star Drills
Flat Chisels	Sheet Metal Cutters
Routing Chisels	Shear Cutter
Flat Sharp Edge Chisel	Cape Chisel
Flat Long Chisel	Spoon Face Chisels
Peening Tools	Muffler Cutter
Finishing and Forming Tools	Round Hose Hollow Gouges
Wedge Drivers	Wood Working Chisels
Oil Grooving Chisel	Wood Gouge

Write for further information to

SUPERIOR PNEUMATIC & MANUFACTURING, INC.

Main Office & Factory: 4758 Warner Rd., Cleveland 25, Ohio — West Coast Office: 15615 Arrow Highway, Azusa, California — Canadian Office: 347 Cannon Street, East Hamilton, Ontario

If you write maker identify as IEN - 13551

FASTER, SAFER INSPECTION

FLUORESCENT

PORTABLE WORK LIGHTS

The modern, long and narrow Commercialite. Gets into hard to reach places. Cool. A maintenance must for all industries. Rugged, dust-tight, enclosed in shock-proof, waterproof Tenite tube with rubber end-protection for vibration areas.

Sold Direct. Write for folder TODAY!

COMMERCIAL REFLECTOR & MANUFACTURING CO. Dept. IE
3109 Maple Avenue, Los Angeles 11, California

If you write maker identify as IEN - 13552

New RADIANT 600 watt R40 FLOODLIGHT *with LONG Neck for HIGH Bays*

Weatherproof
2000 Hour Life
High Candlepower

- Hard glass resists moisture
- Outdoor and indoor service
- Long neck fits most fixtures
- Silver reflector sealed *inside*
- Nickel-plated brass mogul base

MORE LIGHT + LESS POWER + LONG LIFE

Send for Technical Bulletin 54

RADIANT LAMP CORPORATION

314 Jelliff Avenue Newark 8, N. J.

Manufacturers of Lamps from 50 to 10,000 watts for PROJECTION • SPOTLIGHT • FLOODLIGHT • INFRA-RED AERONAUTICAL • MOTION PICTURE PRODUCTION • SPORTS LIGHTING and GENERAL SERVICE

If you write maker identify as **IEN - 13553**

AMPLICALL equips your business with a pressure-easing internal communication system. Its "clear line" facilities provide *2-second speech contact* within and between departments. AMPLICALL frees your busy switchboard for important outside calls—keeps personnel *on the job*—keeps talk terse—saves "waiting and walking" time. Today, more than ever, your business needs pressure-easing, time-saving AMPLICALL. There is a system to fit your special needs. Get the full facts today!

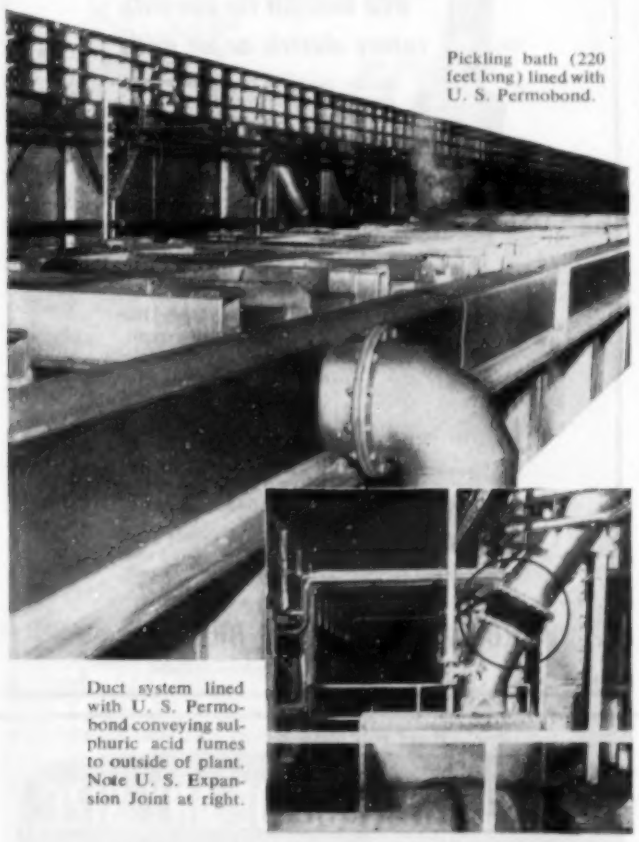
USE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-K Addison Street • Chicago 18, Ill.

If you write maker identify as **IEN - 13554**

Steel gets pickled in bath tanks lined by U. S. Rubber



Pickling bath (220 feet long) lined with U. S. Permobond.

Duct system lined with U. S. Permobond conveying sulphuric acid fumes to outside of plant. Note U. S. Expansion Joint at right.

Many steel plants handle the hot corrosive acids used in pickling operations by means of tanks lined with Permobond, a product made and installed by United States Rubber Company. Without this rubber, the hot acids would "eat" and corrode the metal tanks.

Typical is this large Midwestern steel plant. The complete pickling unit, acid bath tanks and covers, rinse tanks, fume exhaust system, including a large stack, are all "Permobond-protected."

This steel plant also uses U. S. Expansion Joints to counteract expansion and contraction in pipe lines forming the duct system. And to provide flexibility, U. S. Pilot Flexible Pipe is used in the downcomers.

The "U. S." complete engineering service which designed, accurately fabricated, and Permobond-lined the many complex weldments into a finished, efficient pickling line is available to all industry. Consult any of our 27 District Sales Offices or write to address below.

"U. S." Research perfects it.
"U. S." Production builds it.
U. S. Industry depends on it.

UNITED STATES RUBBER COMPANY
Mechanical Goods Division
Rockefeller Center, New York 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

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If you write maker identify as **IEN - 13556**

Control - Electronic instrument designed to regulate process variable

Source: BARBER-COLMAN COMPANY
1300 Rock St., Dept. IEN, Rockford, Ill.

Self-Contained

Temperature, pressure, liquid level, voltage, current, speed, any other variable that can be converted into an electrical signal, can be indicated and regulated by this new Wheelco Series 400 Capacitrol. The instrument is a two-compartment assembly in a die cast aluminum housing for surface or flush mounting. The upper section contains a plug-in measuring and indicating mechanism. The lower compartment contains a plug-in control. Black molded phenolic cover sections are gasketed for protection against dust and moisture. Interchangeable unit construction provides flexibility in making on-the-job instrument modifications to meet changing production requirements.

Measurement can be obtained from a primary element such as a thermocouple, radiation detector, tachometer. A standardizing bridge assembly is provided as an accessory unit when resistance type elements are employed. Operation is on 110 or 220-volt, 50 or 60-cycle ac. in the standard assembly. Contact rating for the control circuit is 10 amp. on 110-volt ac. Housing dimensions are about 9 by 9¼ by 9¼ inches. Weight is about 16½ pounds. The company has prepared a technical Bulletin F-6314 and an educational Bulletin No. 9. Both are available on request.

If you write maker identify as **IEN - 13557**

Pipe - Flexible extruded plastic and fittings, standard and extra heavy

Source: SKYLINE INDUSTRIES
Skyline Drive, Dept. IEN, Titusville, Pa.

Details upon request

Drinking water, beverages, processing solutions, concentrated acids and alkalis, sewage and waste water, air, gases, vapors and fumes can all be handled by the company's new S.S.S. standard and heavy duty pipe. The material is based on polyethylene resins. It is colored black and is available in a range of nominal pipe sizes from ½ to 6 inches. Sizes to 3 in. are in coils. Sizes including 4 and 6 in. are in 24-ft. straight lengths.

The standard pipe ranges from 10.3 to 233 lb. per 100 ft. and is recommended for continuous working pressure at 80 deg. F. to 210 lb. for the ½-in. size and 60 lb. for the 6-in. size. List price is $14.43 to $329.31 per 100 feet. Intermittent surge pressure can go up to 60 per cent of listed calculated burst pressure without damage to the pipe.

The extra heavy design weighs 14.4 to 477 lb. per 100 ft. and is suited for continuous working pressure at 85 deg. F. to 225 lb. for the ½ in. size and 85 lb. for the 6 in. size. It lists at $22.44 to $592.25 per 100 feet. The company also manufactures a line of plastic molded fittings for use with either the standard or extra heavy pipe.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13558**

How Vapor-Wrapper® Prevents Rusting of Steel Products

Nox-Rust's Vapor-Wrapper is a chemically treated paper that instantly releases an invisible rust-preventive vapor. The vapor mixes with moist air, rendering it non-corrosive to iron and steel. Thus Vapor-Wrapper provides fast-acting, long-lasting protection in production, transit, and storage.

Products protected with Vapor-Wrapper are clean, ready to use. There's no mess, grease, or goo; no expensive degreasing or cleaning is needed. Vapor-Wrapper is as easy to use as wrapping paper, and costs little more.

Write for Bulletin with complete information. Address Dept. IEN-124.

NOX-RUST CHEMICAL CORPORATION
333 North Michigan Avenue, Chicago 1, Illinois
Offices in Principal Cities

If you write maker identify as **IEN - 13559**

In 1 minute

The Verifax method, Kodak's sensational new office aid, gives you—

3 copies

of any letter or other office record—legible, dry, photo-exact—and made . . .

on ordinary paper

instead of on specially treated paper. These 3 copies are produced from but *one* sheet of Verifax Matrix Paper for

only 4¢ apiece

which is real copying economy!

Only equipment needed is the compact Verifax Printer . . . priced at low $240. Amazingly simple to operate . . . can be used under present lighting.

Save now! Write for free Verifax booklet and names of near-by dealers.

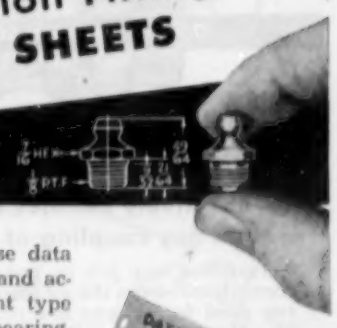
EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.
Price quoted is subject to change without notice.

Kodak

If you write maker identify as **IEN - 13560**

...yours FREE!
the newest, latest
ALEMITE
Lubrication Fitting DATA SHEETS

easy to use! speed detailing!



These simple, easy-to-use data sheets let you quickly and accurately select the right type Alemite fitting for any bearing. Each fitting is illustrated actual size—complete with individual dimensions. Write for *your* free set *now!* Address Alemite, Dept. K-124, 1850 Diversey Parkway, Chicago 14, Illinois

ALEMITE
Industrial Lubrication Equipment
1850 Diversey Pkwy., Chicago 14, Ill.

SPECIALTY SW PRODUCTS

If you write maker identify as **IEN - 13561**

REVOLVATOR
RED-GIANT
features Safety-Ease

Durability—built in by 50 years of Revolvator Co. experience—is still the fundamental of the Red Giant liftruck line. Maneuverability, plus the safety of their exclusive double stroke mechanism, make the models shown leaders in their fields. There is a Red Giant liftruck available for every use—for every capacity.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as IEN-13562

Do the job BETTER with SQUARE D Pneumatic Timers

Whether your requirements call for A.C. or D.C., these Square D design features deliver the most in consistent and accurate performance

Wide Range • Time delay period easily adjusted over a period of 0.2 seconds to 3 minutes in an infinite number of steps.

Easy Adjustment • Finger tip adjustment of timing period can be made simply by rotating a knurled knob or a micrometer dial.

Repeat Accuracy • Less than 10% variation from the mean timing period. Accurate timing, even under abnormal ambient temperature conditions.

Write for Bulletin 225. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-13563

THE NEW HANSEN SERIES 3-RL

QUICK-CONNECTIVE RING-LOCK COUPLING

Effectively handles far more volume than any coupling of equal dimensions

● Handles any job in your shop using ¾" to ⅛" connections—from the air line to the air tool. No longer any need for various size couplings in your hook-up. The Hansen Series 3-RL, with completely interchangeable Sockets and Plugs does it all—simplifies keeping stock of parts in balance—holds inventories to a minimum. Quickly and positively connected merely by pushing Plug into Socket. To disconnect, just turn the sleeve.

Locking ring in sleeve is forced into groove in Plug, provides practically 360° metal to metal contact, reduces wear, and insures tight fit. Equipped with automatic sleeve lock.

Write for Descriptive Literature

THE HANSEN MANUFACTURING COMPANY
8301 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN-13564

Now...a machine that prints your product as you make it

Here's the practical modern way to print trademarks, brand names, part numbers, all-over decorative designs on any material processed in a wide web—sheathing, wallboard, linoleum, gasket material, paper, plastics, cloth, laminates, etc. This GOTTSCHOPRINTER operates as part of your present production set-up, eliminates cost of printing as a separate operation. Clean, permanent impressions assured on anything from .001" to 1.0" thick...flexible or rigid...up to 74" wide.

Write for details

Gottscho — ADOLPH GOTTSCHO, INC. — Hillside 5, N. J. — 50 Years of Leadership

In Canada: RICHARDSON AGENCIES, LTD., Toronto and Montreal

If you write maker identify as IEN-13565

Motor - Single and polyphase to ½ hp., for shaft mounted fan

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

For direct drive

Series 40 designates a new totally enclosed fractional horsepower motor available in single and two-speed single-phase design and in single-speed polyphase assembly with rating to ½ hp. Ball bearings are available for heavy duty thrust applications when the motor is employed to drive a shaft mounted fan or blower. Filtered oil keeps the bearing surfaces clean in the sleeve bearings. An extended oiler is provided so oil can be added without difficulty in any mounting position. Extended through bolts provide a solid mounting face beyond the surface of the end shield. Resilient rings on the bearing housings and an optional resilient base provide for range of mountings.

If you write maker identify as IEN-13566

Drive - Over-running clutch for built-in back stopping duty

Source: FORMSPRAG COMPANY
23601 Hoover Road, Dept. IEN, Van Dyke, Mich.

Bulletin 202

Torque capacity ranges from 170 to 3,950 in. lb. in thirteen sizes of this new Series FS-50 Formsprag clutch. The assembly consists of an outer race and a full complement of hardened steel sprags. The design is suited for application in a bearing bore to employ an existing shaft as the inner race. Nominal outside diameter ranges from 1½ to 4¾ in. with nominal inside diameter at ⅝ to 2 inches. Overall width is ⅞ to 1¾ inches.

If you write maker identify as IEN-13567

Kup-L-Weld names new equipment for laboratory use in production of thermocouples. Any operator can make welds, after adding flux to the metal, by touching the couple to the electrode and pressing a button. The unit will handle wire sizes from No. 10 to No. 30 in any of the standard thermocouple combinations. Burrell Corporation, 2223 Fifth Ave., Dept. IEN, Pittsburgh 19, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13568

Stop CORROSION in your Steam System WITH CORAVOL BOILER

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas of treatment for: Boiler Feed Water . . . Foam Prevention . . . Cooling and Condenser Water . . . Hot Water Supply . . . Refrigerating Brine . . . Rapid Scale Removal . . . Coagulation . . . Algae Control . . . Fuel Oil . . . Soot Removal.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN-13569

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems

A.C.M.I. Borescopes prevent close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

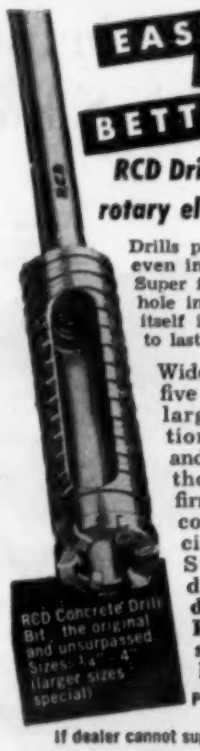
Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN-13570

DRILL CONCRETE

EASIER! FASTER! BETTER!



RCD Drill Bit for use with rotary electric or air drills

Drills perfect, precision holes even in *reinforced* concrete. Super fast and easy (6" deep hole in 1 minute!) Pays for itself in time-savings. Made to last.

Widely used for the past five years by most of the largest U. S. corporations, manufacturers, and utilities, as well as thousands of smaller firms, installation men, contractors, electricians, plumbers, etc. Superior concrete drilling **plus longer drill bit life due to FREE factory resharpening service** keeps them sold.

Personalized guarantee given to every RCD Drill Bit user
If dealer cannot supply (or service), buy direct.

Send for illustrated literature and price list

ROTARY CONCRETE DRILL CO.
650 S. Arroyo Parkway, Pasadena 1, Calif.

If you write maker identify as IEN-13571

TEST HARDNESS OF ANY SIZE, SHAPE, TYPE METAL . . . anywhere . . . in one easy motion!

This 30 oz., 3 in. high tester, in 30 seconds, gives direct dial readings on the job. Just press handgrips, read dial.

Accuracy guaranteed by individual calibration.
Direct reading. No conversions. No calculations. Scales corresponding to:

Rockwell "A" 35-75 Scale	Rockwell "15N" 70-95 Scale
Rockwell "B" 5-100 Scale	Brinell Medium 100-440 Scale
Rockwell "C" 6-70 Scale	Brinell Low 50-260 Scale

Write today for Booklet ET 638 or demonstration in your shop.

NEWAGE INTERNATIONAL
portable metal hardness testers
ERNST PATENT #2536632 MADE IN U.S.A.

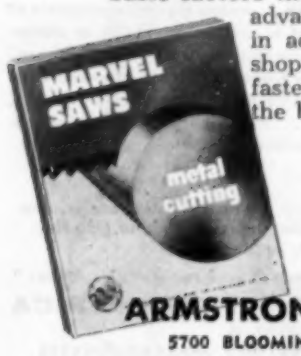
NEWAGE INTERNATIONAL, INC., 235 E. 42 ST., NEW YORK, N.Y.
DISTRIBUTORS' INQUIRIES INVITED

If you write maker identify as IEN-13572

Cutting-off should be done on a Hack Saw

Any way you figure it—speed, accuracy, squareness or cost—a hack saw will far out-perform a band saw when it comes to cutting-off from bars or billets. As builders of both band saws and hack saws we frankly admit this.

Basically, metal-sawing performance reduces to (1) the cutting-edge, (2) blade speed and (3) feed pressure, just as accuracy and squareness depend on the rigidity and tautness of the blade. In each of these basic factors the hack saw has a wide advantage—advantages which in actual results do average shop jobs as much as 4 times faster and for as little as 1/9th the blade cost.



Write for Catalog showing a complete, modern line of high-performance Metal Saws (Both "Band" and "Hack")

ARMSTRONG-BLUM MFG. CO.
5700 BLOOMINGDALE AVE. • CHICAGO, ILL.

If you write maker identify as IEN-13573

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

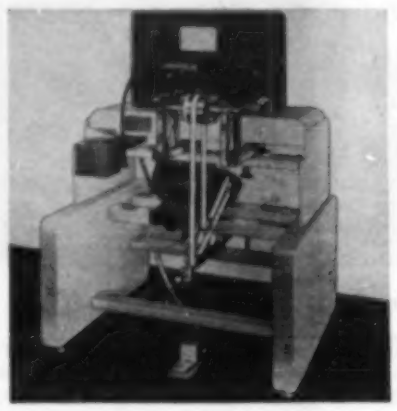
Write for full information today, to Dept. 300

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN-13575

Balancing - Motor driven machine measures and locates rotor unbalance

Source: MAC DELL SALES DIVISION
850 W. Lake St., Dept. IEN, Chicago 7, Ill.



Bulletin, "Model 122"

Five models, for floor or bench mounting, make up a new line of balancing machines. Two are equipped to read and locate static unbalance. Three read dynamic unbalance. Minimum work weight ranges from 2 oz. to 5 lb. with maximum weight at 10 to 100 pounds. Maximum rotor diameter is 12 to 18 in. and maximum rotor length is 12 to 24 inches. Maximum shaft diameter is 1½ to 2¾ inches. Balancing speed range is 500 to 3,000 rpm.

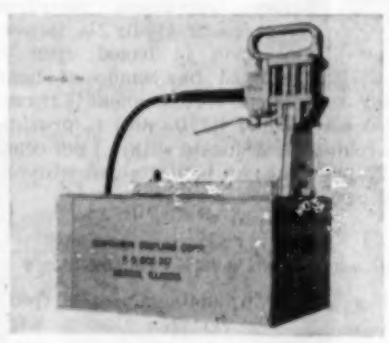
The static machines read overall unbalance and locate it by means of a stroboscope light and angle markings on the rotor. The dynamic machines indicate unbalance at first one work support and then the other. They also locate it angularly by means of the stroboscope light. Control centers at a push button station containing three switches. One is for dynamic unbalance to the left. One reads unbalance to the right. The center operates the light for unbalance location.

The work applies in half bearings on cantilever supports. It is belt connected to a driving motor mounted beneath the supports. The motor is operated by a foot switch.

If you write maker identify as IEN-13576

Stapling - Air operated machine, portable design, closes filled cartons

Source: CONTAINER STAPLING CORP.
308 N. Park Ave., Dept. IEN, Herrin, Ill.



Patent 2,680,845

Schafroth Model PA is a new portable air operated machine that employs "big" staples across the center seam of regular filled cartons. The staples can be spaced 5 in. apart. Four are sufficient to close the top or bottom of the average size slotted carton. The staples measure 1⅜ in. in crown size and have ⅝ or ¾-in. legs.

The magazine holds 100 in standard size or 200 with an extra length. Three anvils are interchangeable for shallow, average and deep penetration. Operation is on 50 to 60-lb. air.

The machine measures 13½ in. in length with the standard magazine by 4¾ in. in width by 11½ in. in height. It weighs 9½ pounds. Length increases to 24 in. with the double length magazine. It adds $20 to the standard list price of $175.

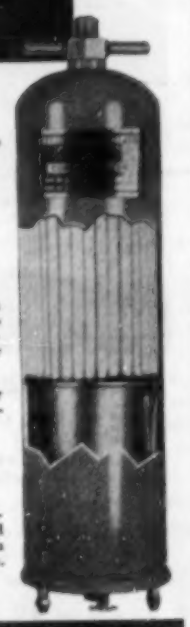
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13577

HANKISON PRODUCTS CUT MAINTENANCE COST.

YOU MUST... *Condense and filter* ...if you want "INSTRUMENT-QUALITY" Compressed Air

HANKISON
Condensifilter



Sets years-ahead filtering standards. When your problem involves Clean, Dry, Air to obtain more efficient, dependable instrument operation, the Hankison Condensifilter offers you a practical low cost solution.

Hankison Condensifilters give greater overall efficiency through these engineering extras -

- Twin Action Principle, that both filters and dehydrates.
- "O" ring seal construction.
- Low maintenance cost.

See why maintenance men are specifying Condensifilters. A qualified engineer is available to consult with you on all compressed air problems.

SEND FOR BULLETIN

HANKISON CORPORATION
350 BILTMORE BUILDING 951 Banksville Rd., Pittsburgh 16, Pa.

If you write maker identify as IEN-13578

If you write maker identify as IEN-13579

Our near-sighted snake charmer friend should know he can get more out of a wire if it has a well soldered connection. Making the right kind of flux core solder for every application has been Kester's sole business for more than 50 years. For top quality solder, your best buy, today as always, is Kester Solder!

WRITE TODAY for Kester's NEW 78-Page Informative Textbook "SOLDER" . . its fundamentals and usage"

KESTER
SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Ill.
Newark 5, N. J. • Brantford, Canada

If you write maker identify as IEN-13580

Laminates for high strength-to-weight

• Strength and light weight are two advantages of *Synthane* laminated plastics. Because of these properties *Synthane* is widely used in aircraft construction, ball bearing retainers, and many similar applications. *Synthane* also has high dielectric strength, chemical resistance, and dimensional stability.

Synthane is supplied in sheets, rods, tubes, special shapes and fabricated parts and in a wide choice of grades to meet design requirements. The coupon will bring you full information.

SYNTHANE
SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.

Manufacturers of laminated plastics

Please send me more information about Synthane.

Name_____
Company_____
Address_____
City_____ (zone)_____ State_____

If you write maker identify as IEN-13581

YOU CAN SEE THE DUST BUT NOT THE MONEY

The dust is visible, but the dollars and cents loss of inefficient collection methods is hard to see. If saleable or reusable process dust is going up your chimney you can turn this loss into profit with an efficient dust collection system geared to the needs of your particular process.

Our new manual, "A Simplified Test Method for Dust Control Determination" describes the easiest method of determining your dust problem and equipment needs for effective control and recovery.

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN-13582

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

This big liner and seat ring were centrifugally cast of bronze "G" metal for use in a large hydraulic valve.

BIG in size TOPS in dependability

REGARDLESS of size, you can put complete trust in Shenango centrifugal castings—rough, semi-machined or precision finished.

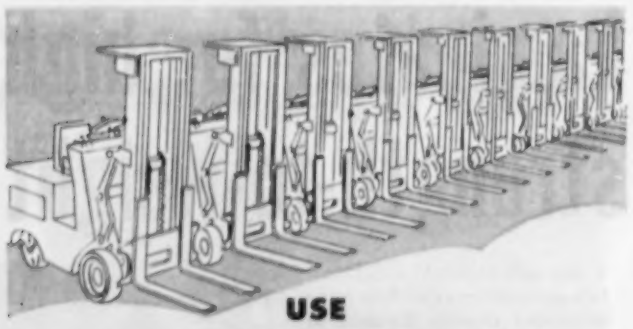
Because of Shenango's centrifugal casting process, you receive a uniform, close-grain, pressure-dense metal free from weakening imperfections. Other features include greater resistance to wear, better elongation and increased strength. All in all, Shenango castings, ferrous or non-ferrous, are your best buy for any type of severe service.

The large liner and seat ring shown above are only two of the many varieties made by Shenango. For additional information on various size bushings, liners, rings, rolls, drums or almost any annular or symmetrical shape, address . . .

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

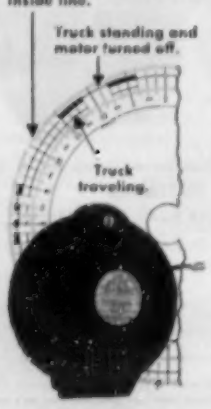
SHENANGO
COPPER, TIN, LEAD, ZINC BRONZES • MONEL METAL
ALUMINUM AND MANGANESE BRONZES • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN-13583



USE SERVIS RECORDERS

FOR EXTRA DIVIDENDS FROM THIS LINE-UP



Servis Recorders provide you with a permanent chart written daily by each of your industrial trucks recording every activity. This gives you an unquestioned basis for improving scheduling, organization, and maintenance of your industrial truck fleet to get every possible dividend from your investment in them.

Servis Recorders ride every trip your truck makes and tell you everything that happens—even if the engine was left idling. With a special attachment, these instruments tell you the number of lifts made daily. Accumulating Servis Recorder Charts for each truck gives you exact records for truck maintenance. Model DS Servis Recorder, shown, records traveling or standing time. A second stylus records engine idling or number of lifts made.

Write today for Industrial Catalog No. 10.

THE SERVICE RECORDER COMPANY
13758 Euclid Avenue • Cleveland 15, Ohio

If you write maker identify as IEN-13584

Ventilating - Air diffuser installs in a Acousti-Line ceiling

Source: PYLE-NATIONAL COMPANY
1334 N. Kostner Ave., Dept. IEN, Chicago 51, Ill.

For a neat finished job

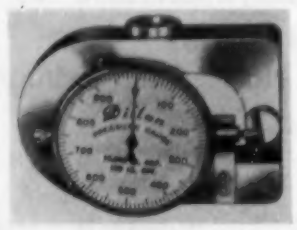
Linear Multi-Vent is a new panel type air diffuser particularly designed for installation as an integral part of the Acousti-Line ceiling manufactured by Celotex Corporation. The new diffuser employs the Acousti-Line panel as the diffusing plate to eliminate protruding air outlets and to make it unnecessary to install grilles.

The assembly includes a flexible compressible tubing to connect to the duct air supply and eliminate the need for sheet metal work and its attendant fitting requirements. It also permits the installation of shop built ducts prior to and independent of the ceiling suspension.

If you write maker identify as IEN-13585

Gage - Reads mechanical pressure to 10,000 pounds through six ranges

Source: W. C. DILLON & COMPANY
14620 Keswick St., Dept. IEN, Van Nuys, Calif.



Also for tension

The company announces addition of four ranges to its pressure gage, previously described IEN-2784-47. Maximum pressure is now 10,000 lb. as compared to the previous 5,000 pounds. This new and larger instrument measures about 5⅞ by 4½ by 2½ inches. Operation is based upon a U-shaped bar made of heat treated tool steel. This bar deflects and its movement is transmitted through a jeweled mechanism to the dial to provide a reading in pounds. The reading is accurate within 1 per cent. Accidental overload of 25 per cent can be sustained without injury to the calibration.

If you write maker identify as IEN-13586

Spanner wrenches are available in small quantities from Dayton Rogers Mfg. Co., 2824 13th Ave., Dept. IEN, Minneapolis 7, Minn. made from die cut and formed steel. Wrenches measuring 2 to 12 in. in length can be produced in specified design.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13587

MAKE YOUR OWN CRANE... ...at a NEW LOW COST!

Handle loads up to 2000 lbs., SAFELY,

easily . . . Buy crane beam locally — we furnish the rest . . . A pair of self-aligning, ball bearing Flexo-Crane trucks cost only . . . . . $119.00 Simple instructions come with shipment.

•

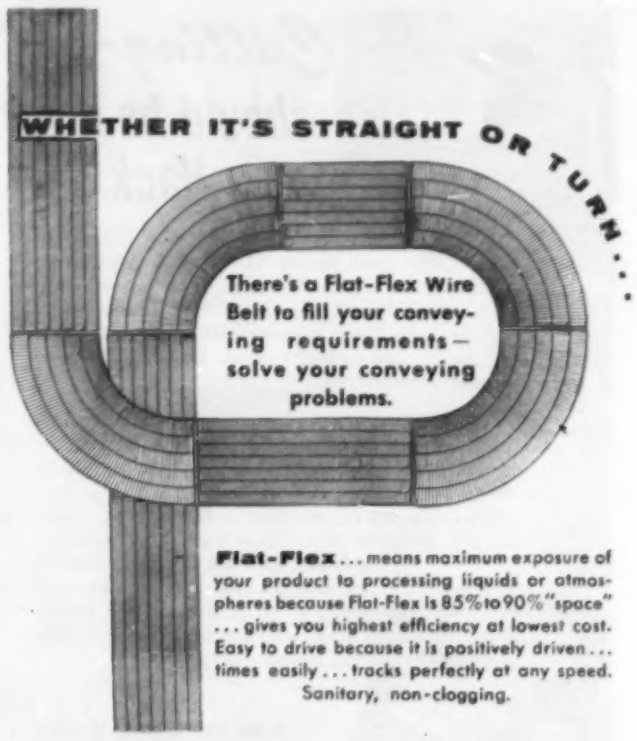
Complete Flexo-Crane, with hoist and accessories, is also economically priced. To get full details, ask for —

BULLETIN F-136

The Abell-Howe Line includes a wide range of overhead cranes monorails, hoists and accessories.

ABELL-HOWE COMPANY 53 W. JACKSON BLVD. CHICAGO 4, ILL.

If you write maker identify as IEN-13588



Flat-Flex . . . means maximum exposure of your product to processing liquids or atmospheres because Flat-Flex is 85% to 90% "space" . . . gives you highest efficiency at lowest cost. Easy to drive because it is positively driven . . . times easily . . . tracks perfectly at any speed. Sanitary, non-clogging.

Our newly developed Flex-i-Turn, with a 16" inside radius, now makes possible a complete, compact installation of Flat-Flex Wire Belt on any production line.

Available in widths and meshes to fit your requirements. Write:

WIRE BELT COMPANY OF AMERICA
DEPARTMENT 40
750 MAIN STREET, CAMBRIDGE, MASSACHUSETTS

If you write maker identify as IEN-13589

fluids CAN'T PENETRATE this barrier

This Dome Nut SEALS WITHOUT SEALING COMPOUNDS

SPECIFICATIONS
Conforms to applicable requirements of AN-N-5. BUNA-N type seal conforms to MIL-R-6855 for aircraft fuels Types 1, 2, and 3. Temperature range: −80°F to +225°F continuous operation. Pressure range: ±50 psi constant or fluctuating.

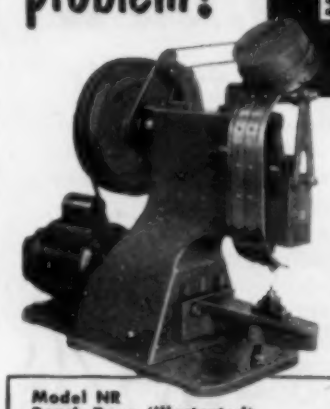
This self-sealing, self-locking dome nut is being specified by more than 11 major aircraft manufacturers, for integral fuel tank sealing. Floating nut with stationary seal (floats .025 all directions) is unaffected by successive bolt installations. Reduces installation time, weight and maintenance.

Nutt-Shel
811 Airway, Dept.
Glendale 1, California
Citrus 4-4191—CH 5-3693

If you write maker identify as IEN-13590

Solves any eyeleting problem!

Edward Segal AUTOMATIC EYELET ATTACHING MACHINERY



Model NR
Bench Type ***(Illustrated)***
Stroke 2¾". Depth of throat (end ram to frame) 7¾". Adjustable horn provides ample space for special feeds, fixtures and indexing mechanisms.
Model XNR same as above for hand-feed staking operations, 1½ & 2 ton capacity.

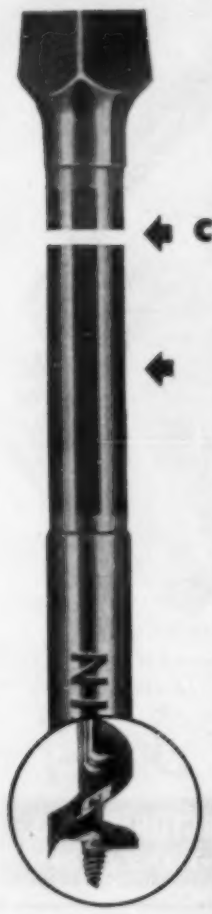
Whatever the size and the materials there's an Edward Segal precision-built machine to do a cost reducing, time saving job on your eyeleting assembly . . . For single or multiple settings. Interchangeable raceways, rams and tool holders give these machines amazing versatility. In constant use in hundreds of plants in all fields.

Submit your specs to us for analysis without obligation, and write for our interesting booklet loaded with eyelet setting data — Bulletin M-51.

EDWARD SEGAL • 72 SPRING STREET • NEW YORK 12, N. Y.

EDWARD SEGAL EYELET ATTACHING MACHINERY
SPECIAL HOPPERS AND FEEDING DEVICES

If you write maker identify as IEN-13591



FITS BOTH BIT BRACES ELECTRIC DRILLS

CUT OFF HERE

Irwin 2-Way "Hex" Shank fits both Bit Brace and Electric Drill Chucks

IRWIN "HEX" SHANK WOOD BITS

Use new Irwin 2-Way "Hex" Shank wood bits in Bit Brace. Remove and use in Electric Drill. **"Hex" Shank fits both—perfectly!** No wobble, no run-off. Speed up work on the job. Reduce replacement stock and handling by 50%. Sizes 4/16" to 17/16".

Call your mill supply distributor, or hardware wholesaler for details and prices. Irwin—Wilmington, Ohio.

IRWIN HEX SHANK WOOD BITS

If you write maker identify as IEN-13592

IN HOT DIMPLING HIGH STRESS METALS...

Hot dimpling of high stress materials for flush riveting used in today's airframes requires unfailing control of sheet temperatures within very close limits. Over temperatures might cause annealing and loss of strength, and under temperatures, inter-granular disorder and cracking.

To assure this precise and dependable control, Aircraft Tools Inc., employs Sensitrol Relays in the Hot Dimpling Press illustrated, as well as in its portable dimpling tools. Operating directly from thermocouple output, these relays render the equipment inoperative should temperatures drop below a specified limit during dimpling; and also are used in the thermocouple break-circuit to prevent heater burn-out in case of thermocouple failure.

This is another instance where Sensitrol Relays have been adopted because they provide a positive means of control direct from feeble input signals . . . *without any amplification.* Some of their outstanding features are listed below. The complete story, in bulletin form, is available on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, N. J.

8366

Ultra-Sensitive SENSITROL Relays . . .

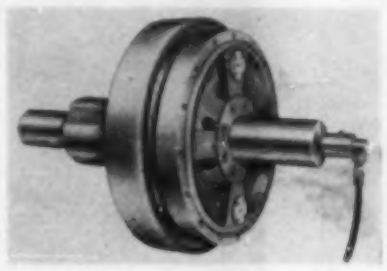
- Operate directly on values low as ½ micro-ampere or ¼ millivolt.
- Handle substantial wattage at 110 volts on non-chattering magnetic contacts.
- Eliminate need for amplifiers and auxiliary power supplies.
- Available with single or double contacts, fixed or adjustable, manual or solenoid set.

WESTON *Instruments*

If you write maker identify as IEN-13594

Drive - Pneumatic clutch for quick actuation from remote point

Source: DODGE MFG. COMPANY
500 S. William St., Dept. IEN, Mishawaka, Ind.



Specifications on request

Air-Grip trade names new clutch design that interchanges with or can be used to replace Dodge or other mechanical clutches in existing installations. It is available from stock in single and double plate models rating 8½ to 806 hp. per 100 rpm. with air pressure at 80 pounds. Air is introduced through the shaft on which the clutch is mounted by means of a rotary joint connecting to an air line leading to a control valve. The valve can be located in any convenient local or remote position. Minimum movement, between engaged and released positions, makes the clutch responsive to quick control and to "inching" operation. Instant disengagement can be specified, in which case quick-release valves are built into the clutch assembly.

If you write maker identify as IEN-13595

Marking - Decalcomanias are resistant to heat and solvents

Source: MEYERCORD COMPANY
5323 W. Lake St., Dept. IEN, Chicago 44, Ill.

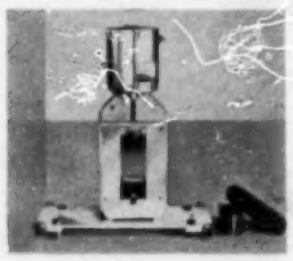
Technical data upon request

Type HR is one of three new decalcomanias for application on laminated metal surfaces such as transfer cores, flexible shafts and casings operating at temperatures to 400 deg. F. Type SHR will withstand constant operating temperature between 500 and 600 deg. F. It is cured for an hour or more following application. Type HHR will stand up in temperatures to 1,000 deg. F. when cured between 500 and 600 deg. F. It will resist most types of commercial solvents. All three decals are water immersed and hand applied.

If you write maker identify as IEN-13596

Shearing - Hydraulic machine rides with and cuts moving billets

Source: MANCO MFG. COMPANY
Grove & West, Dept. IEN, Bradley, Ill.



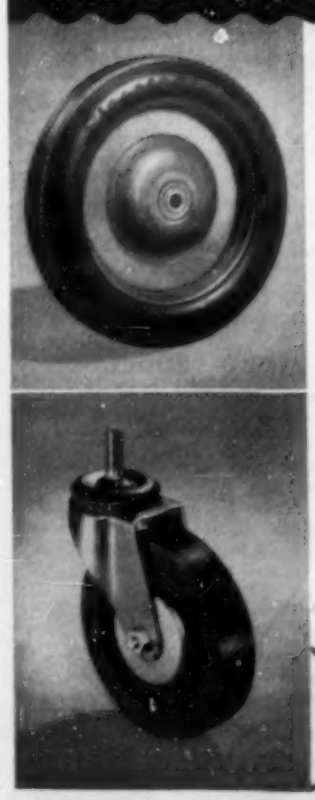
Guillotine design

New "flying" hydraulic shear is wheel mounted to ride with a moving billet and to bite into the billet as it moves. The cutting action takes place while the billet is at about 1,300 deg. F. Pressure is supplied by a separate flexibly connected hydraulic pump. Cutting capacity is 125 ton, sufficient to shear a 4½-in. hot steel billet. The machine is jacketed for water cooling. Weight is about 1,100 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13597

Discover Why Pemco Wheels and Casters KEEP Rolling!



Write today . . . you'll receive by return mail our New Catalog

. . . In it you'll see why so many users of wheels and casters are choosing Pemco. Large or small, your requirements too can be handled with greater success by Pemco.

Advantages for You

For example, Pemco Wheels are distinguished by a unique solid metal hub which gives far greater rigidity, ability to absorb shock loads, and ease of operation with minimum wear. Pemco Casters feature two rows of load carrying balls for closer alignment, easier operation.

Let us put complete facts and specs in your hands — request our catalog today.

PEMCO WHEEL CO.
1881 Ravine Road
Kalamazoo, Mich.

If you write maker identify as IEN-13598

Why does HERMAN NELSON *outsell all other portable air heaters?*

BECAUSE: Every Herman Nelson Heater gives *complete safety indoors*...with dangerous fumes vented outside—*maximum efficiency outdoors*...with flexible canvas ducts channeling heat right to the spot where you need it!

More than 30,000 Herman Nelson Portable Air Heaters are in use today. Whether you buy, rent or lease, you'll get the best deal if you see your Herman Nelson Distributor first!

AAF **HERMAN NELSON**
BEST KNOWN NAME IN
PORTABLE AIR HEATERS
DIVISION OF AMERICAN AIR FILTER COMPANY, INC.
DEPT. 73, MOLINE, ILLINOIS

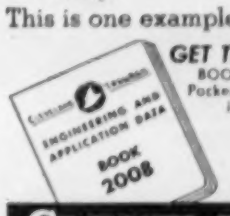
Write for FREE Monthly Weather Forecasting Service
Better than 85% accurate during the past three years!

If you write maker identify as IEN-13599

LUMBER CRANE *Pays For Itself In 13 Weeks*

In just 13 weeks the entire cost of crane, runways, and erection was absorbed because of the efficiency that was introduced in the handling of lumber. 10,000 feet are handled per 10-hour-day.

This is one example among hundreds of the savings made possible with Cleveland Tramrail.



GET THIS BOOK! BOOK No. 2008 Packed with valuable information

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4231 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as IEN-13600

SAVE TIME • MANPOWER MACHINERY • MONEY

. . . with a **CLEMENTS-CADILLAC**

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacement, down-time.

Ask your mill supply dealer for a demonstration, or write us for information.

CLEMENTS **Cadillac** PORTABLE ELECTRIC
Combination Blower-Suction Cleaner
MADE IN 5 MODELS ILLUSTRATED, 1 HP.

"Most Useful Tool in the Plant"

CLEMENTS CADILLAC COMBINATION BLOWER-SUCTION CLEANERS
CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.
USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN-13601

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN-13602

WHEN LIGHTS GO OUT EXIDE® LIGHTGUARDS® GO ON INSTANTLY...AUTOMATICALLY!

Wherever people gather, there's a vital need for Exide Lightguard protection. Some industrial plants use as many as 200! Here are spots where you now need Lightguard emergency lighting protection: *Corridors, aisles, cafeterias, lobbies, boiler rooms, engine rooms, switchboard rooms, loading platforms, exits, firetowers.*

NEW MODEL M

With the new Model M you get instant adequate lighting whenever normal lighting is interrupted—no matter what the reason. The Model M has a two-rate charger—high rate or trickle. After the emergency, automatic controls recharge the Exide battery specially designed for long life, easy maintenance, dependable operation. UL-approved, can be plugged into any 115 volt outlet—each lamp illuminates up to 10,000 square feet.

WRITE for interesting folder with facts on why Exide Lightguards guarantee more protection for every dollar you invest in such equipment.

Exide INDUSTRIAL DIVISION
The Electric Storage Battery Co., Philadelphia 2, Pa.

If you write maker identify as IEN-13603

Drill Holes within .001" Accuracy with the Master Optical CENTER LOCATOR

Speediest—Simplest—most accurate method of locating centers and drilling holes. For a decade, machinists have been drilling and spacing holes with the Center-Locator to within .001". Just the thing for drilling round holes in thin material . . . avoiding drill run-outs . . . counter-boring holes with an ordinary drill. Makes your drill press do the work of a jig boring machine!

Easy to operate: Simply lay out your work with a height gauge, locate center through the powerful magnifier, then replace the magnifier with any of 16 drill bushings furnished.

38.50 postpaid or from your dealer. Unconditionally guaranteed.

Bulletin on request

MASTER SPECIALTY CO. Inc.
3725 Monitor Avenue
Minneapolis 16, Minnesota

Affiliated with Specialty Products Co.

If you write maker identify as IEN-13604

Packaging - Carton opening tape to eliminate need for opening tools

Source: CHICAGO PRINTED STRING CO.
2300 Logan Blvd., Dept. IEN, Chicago 47, Ill.

For clean, quick easy opening

Zip-Open trade names a new tape, for application by the carton manufacturer, so the finished carton can be opened by the receiver without need for tools. The opening action involves lifting a tab that locates the end of the tape inside the carton, then pull is applied on this tab to rip out the tape and open the carton as shown in the illustration. The company is prepared to name manufacturers of the cartons and to supply detail information to assist the carton user.

If you write maker identify as IEN-13605

Hard Facing - Alloy welding rod for oxy-acetylene torch application

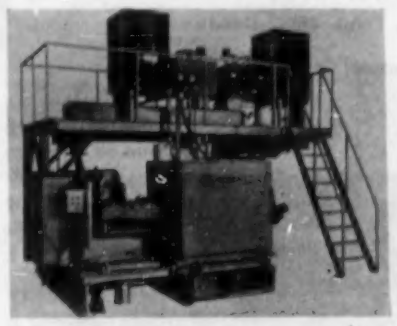
Source: WALL COLMONOY CORPORATION
19345 John R St., Dept. IEN, Detroit 3, Mich.

Four diameters to ⅝ inch

Walloy No. 6 is a new chromium cobalt tungsten hard facing alloy rod for deposit on a work surface by means of an oxy-acetylene torch. The material provides high impact combined with corrosion and abrasion resistance. It does not readily heat check under pressure at elevated temperatures. It resists chipping and spalling and has some ductility. Deposits can be machine ground to a smooth finish. The metal tests to Rockwell hardness of 40-44 on the C scale. Tensile strength is 105,000 lb. per square inch. Melting point is at 2,325 deg. F. for the new material.

If you write maker identify as IEN-13606

New single station shell molding machine, automatic and capable of turning out forty 22 by 28 in. shells per hr., has been designed and built by Mechanical Handling Systems, Inc., **4600 Nancy Ave.,** Dept. IEN, Detroit 12, Mich. Timing for pattern pre-heat, dwell, cure is controlled, to a maximum interval of 120 sec., to permit adjustment required in different type molds. Operation is automatic from the point of sand blending and supply through curing in the gas fired oven. Complete specifications are available on request.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13607

1 NEWCOMER ECONO-CLAMP TOOLS

2 revolutionary ways to beat production costs

2 NEWCOMER "THROWAY" CARBIDE INSERTS

Available in all styles for Heavy Duty Roughing and Accurate Finishing

ELIMINATE GRINDING . . . SPEED PRODUCTION

Here's why modern mass production facilities are saving up to 50% on carbide tooling costs with Newcomer Econo-Clamp Tools and "Throway" Carbide Inserts.

- Ruggedly designed alloy steel holder gives maximum strength.
- Top clamp locates cutting edge accurately after each indexing.
- Hardened steel anvil furnishes a solid, flat seating surface for half length or "Throway" inserts.
- "Throway" inserts give multiple cutting edges without grinding.
- One holder uses a full length, half length or "Throway" insert.

SEND TODAY FOR BULLETIN.

NEWCOMER PRODUCTS, INC.
LATROBE, PENNSYLVANIA
General Sales Office: 512 Franklin Ave., Pittsburgh 21, Pa.

If you write maker identify as IEN-13608

REPUBLIC "LO-TORQ" SELECTOR VALVE

- 0-6000 psi service
- Low turning torque
- Panel mounting
- Semi-steel, bronze, aluminum alloy
- No leakage at any time
- 3 types of portings

Write for catalog No. 454 for complete information.
Distributors in principal cities from coast to coast.

REPUBLIC MANUFACTURING CO.
15655 BROOKPARK ROAD • CLEVELAND 11, OHIO

If you write maker identify as IEN-13609

AJUSTRITE® DRAFTING CHAIR is Just Right for COMFORT·UTILITY PRICE

Model RUC 2230 $32.20

Three Sizes
20" to 28"
24" to 32"
28" to 36"

- 2" Upholstered Seat
- No Soiled Hands Adjusting Seat
- 2-Way Adjustable Back Rest
- Full Swivel Seat

The AJUSTRITE CHAIR enables the user to quickly and easily adjust the height of the seat up or down to suit his individual requirements — without soiling his hands.

The 2-way posture adjustment of the back rest assures a relaxed position free of strain and tension.

Also available with round metal or wood seat, formed plywood or solid hardwood saddled seat—priced from $17.00. Gray or green finish optional.

FREE TRIAL
Use AJUSTRITE Chair or Stool for 30 days without obligation. Prove to yourself the many advantages AJUSTRITE offers in COMFORT-UTILITY-PRICE.

AJUSTO EQUIPMENT CO.
2146 Madison Avenue Todelo 2, Ohio

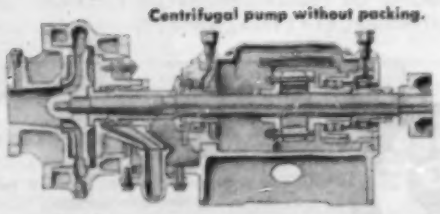
If you write maker identify as IEN-13610

IF YOU PUMP

acids, caustics, pulp, mash, slime, or solids-bearing liquids

WE HAVE A CENTRIFUGAL OR ROTARY PISTON PUMP THAT CAN DO A GOOD JOB FOR YOU

Centrifugal pump without packing.



Choose from many models in over 25 corrosion and abrasion resistant materials such as chrome—nickel — moly — cupro — alloys; RH silicons, silumin, bronze; rubber-lined, and antimonial lead, etc.

Tell us your application. We'll send data.

NEUMANN & WELCHMAN, INC.
22-10 Raphael Street, Fair Lawn, N. J.

If you write maker identify as IEN-13611

...Give fragile products the Kid Glove touch

with new Colson Pneumatic Casters

These new plate type casters with 8" or 10" pneumatic or 6", 8" or 10" semi-pneumatic tires are ideal for cushioning the ride over rough, bumpy floors.

All steel parts are 3/16" thick; heat-treated kingpin is 7/8" diameter; heavy duty double ball bearing swivel construction. Rigid and swivel fork models available

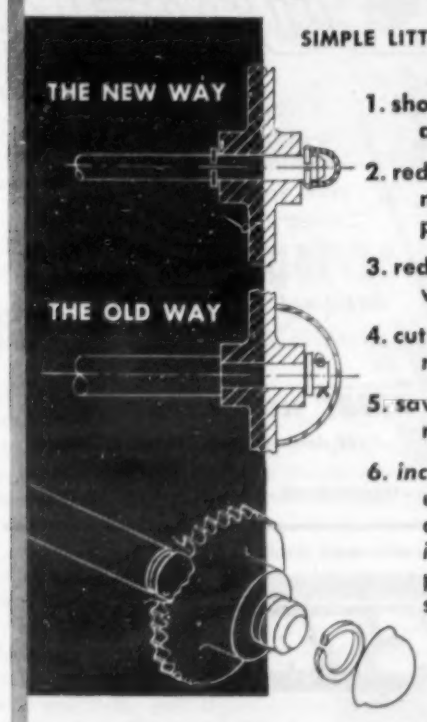
Write us or consult the yellow pages (under "casters") for the COLSON office near you.

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • HAND TRUCKS • LIFT JACK SYSTEMS
Hydraulic, Electric and Mechanical Power Lifts and Transports

If you write maker identify as IEN-13612

"SAVE TIME SAVE MATERIALS SAVE MONEY"

will always be a great industrial slogan



- The world admires not only our unparalleled mass production, but our ingenious designing and *redesigning* which constantly improve and simplify *without* sacrificing strength and complete dependability.

Practically every manufacturer can improve his product—and his ultimate profit—by redesigning his machines and the construction details of his products.

The use of these inexpensive yet efficient artificial shoulders is already widespread—and is increasing constantly.

Every product—metal, wooden or plastic—should be examined carefully to see where shoulders and collars could be redesigned to use these steel rings.

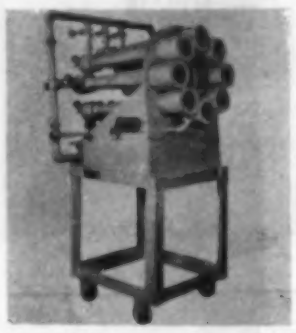
Write today for descriptive booklet.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, N. J. • MILWAUKEE 2, WISC., U. S. A.

If you write maker identify as IEN-13614

Heating - Gas burner assembly on portable stand to dry aggregates

Source: ECLIPSE FUEL ENGINEERING CO.
1102 Buchanan St., Dept. IEN, Rockford, Ill.



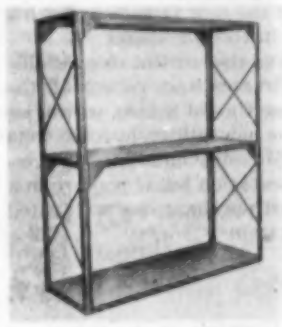
Built to order

Eight of the company's gas burners are assembled in a ring and are connected into a manifold to fire on 10-lb. pressure of natural gas in this new Flame Thrower assembly. The burners are equipped with atmospheric mixers and a pushbutton-operated spark-ignited constant-burning pilot. The assembly was designed particularly to drive moisture out of sand and gravel in connection with a bituminous mix. The burners will throw a 30-ft. flame. They rate 40 million btu. per hour.

If you write maker identify as IEN-13615

Storing - Steel rack with 6 ft. span, 1,500 lb. per shelf

Source: FRICK GALLAGHER MFG. CO.
110 S. Michigan Ave., Dept. IEN, Wellston, Ohio



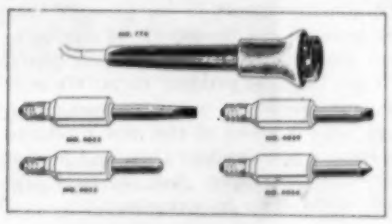
Rigidly braced

Bulk storage designates a new rack combining high load capacity with long span shelves to handle heavy machine parts, dies, equipment. Width between supporting angle posts is 6 feet. Depths are 18, 24 and 30 inches. Heights are from 6 to 9 feet. Shelves are vertically adjustable on 6-in. centers, and can be added as required. Each shelf rates 1,500 pounds.

If you write maker identify as IEN-13616

Soldering - Iron plated tips to apply in pencil type electric iron

Source: UNGAR ELECTRIC TOOLS INC.
4101 Redwood Ave., Dept. IEN, Venice, Calif.



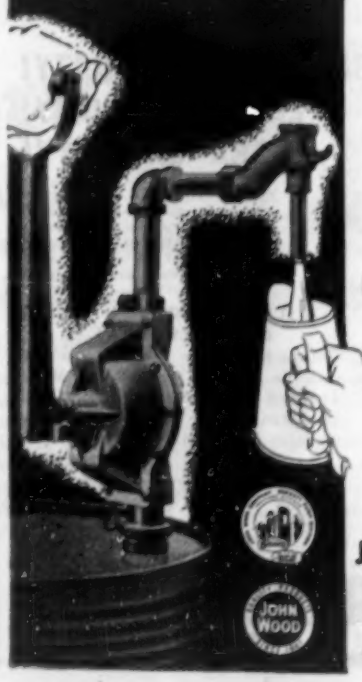
For production

Four new tips made of tellurium copper, each plated with iron to eliminate the need for dressing, have been developed for use in the company's pencil type soldering iron previously described IEN-6939-52. Two chisel type tips, one pyramid type and one heater type, make up the four. The tips reach between 850 and 1,000 deg. F.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13617

ELIMINATE WASTE— MESS—HAZARD!



Pump it with NEW Bennett BIG "G"

DOUBLE ACTION PUMPS

For gasoline, lubricating oil, anti-freeze, turpentine, cutting oil and various solvents. Special models furnished with hose or spout, allow transfer of many other industrial liquids. Let us know your liquid handling problems.

JOHN WOOD COMPANY
Bennett Pump Division
Muskegon, Michigan
Offices in Principal Cities

If you write maker identify as IEN-13618

WATER PICK-UP

with SPENCER VACUUM

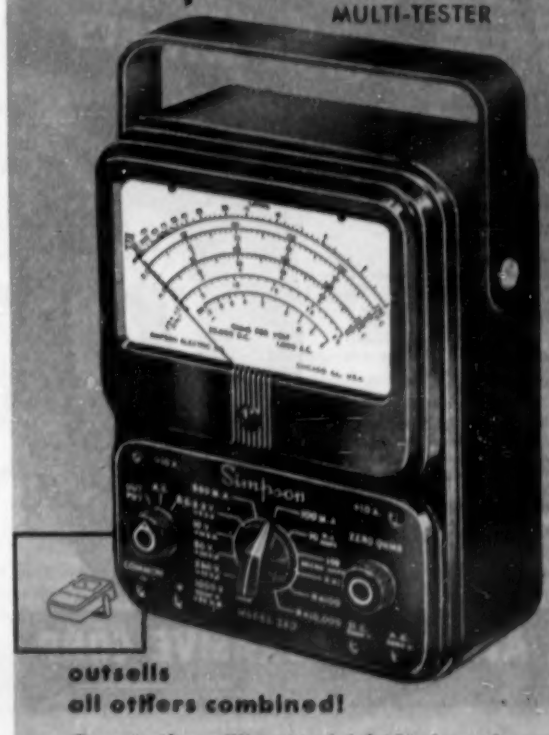
Any Spencer Vacuum System will pick up liquids—after scrubbing, accidental spillage or floods and from sump tanks. For large volume pick up, special collector tanks from 6 to 100 gallons capacity or liquids may be discharged direct to the sewer.

Spencer also picks up hot materials, reclaims metals and of course will clean large industrial areas and your offices in a remarkably short time. Bulletin on request.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-P

If you write maker identify as IEN-13619

MODEL Simpson 260 MULTI-TESTER



outsells all others combined!

Over half a million Model 260's have been sold to date! 20,000 Ohms per volt. You'll find it wherever quick, accurate, electrical checks are needed. It's so handy, so dependable, so sensibly priced. Only $38.95, including Adjust-A-Vue Handle. Carrying cases from $6.75.

world's most popular!

MODEL 262 the new vom with a 7" meter *Deluxe!*

Here's a new deluxe type VOM, with a sensitivity of 20,000 ohms per volt DC, and 5,000 ohms per volt AC. Has 33 ranges through only one control. The big easy-to-read 7-inch meter is enclosed in a compact 7-inch case. It's lightweight, dependable, and accurate. Price complete, including Adjust-A-Vue Handle, $59.50. Carrying case, $9.95.

SEE YOUR JOBBER OR WRITE TO . . .
Simpson ELECTRIC COMPANY
5207 W. Kinzie St., Chicago 44 Phone: EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ontario

If you write maker identify as IEN - 13621

Can Veelos V-Belts
CUT VIBRATION
20% to 90% in your machines?

Machine vibration is usually caused by one or more of these five factors: bearings; motor; clutch; sheaves; v-belts. Frequently, v-belts alone are the major cause of vibration.

Actual performance on many different types of machine tools has proved that Veelos v-belts can reduce vibration 20% to 90%.

Here's why this is so . . .

Every Veelos belt is *perfectly balanced* throughout its entire length. Every Veelos link and stud is *absolutely uniform*. The *smooth, machine cut sides* and the *laminated construction* of the belt assure full, vibrationless power delivery.

These facts can be readily demonstrated with an electronic analyser. This analyser measures amplitude of vibration to as low as 2-millionths of an inch. A few minutes is all that is required to show you that Veelos runs smoother and creates less vibration than regular v-belts.

Drop us a line for a demonstration with the electronic analyser.

VEELOS THE LINE V-BELT

MANHEIM MANUFACTURING & BELTING CO.
651 Manheim St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

Veelos is known as Veelink outside the United States

If you write maker identify as IEN - 13622

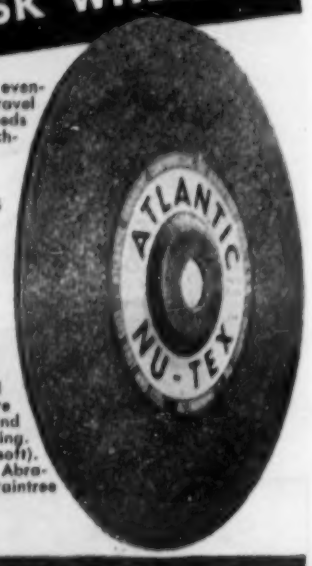
NOW . . . for smooth results at low cost specify . . .

NU-TEX
DEPRESSED CENTER
DISK WHEELS

FOR FASTER, SMOOTHER CUTTING, roughing and grinding. Special, built-in resiliency provides smooth, cushioned cutting action . . . reduces bouncing . . . holds wheel in close contact with work. Cushioned action distributes pressure evenly . . . makes every inch of surface travel an inch of productive cutting . . . speeds up work with either portable or bench-type grinders.

FOR LONGER LIFE . . . LESS DOWNTIME. Bonded together with an extremely tough resin for added durability. Textile reinforcement provides maximum on-the-job safety . . . extra protection against breakage . . . longer life under continuous operation.

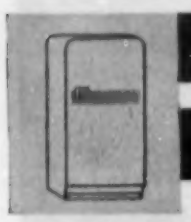
FOR A WIDE SELECTION . . . PROMPT SERVICE. Nu-Tex Depressed Center and Straight Disk Wheels are now available in popular diameters and thicknesses for all types of finishing. Grades range from 0 (hard) to 6 (soft). Write for complete details. Atlantic Abrasive Corp. 502 Pearl Street, South Braintree 85, Massachusetts.



ATLANTIC ABRASIVE CORP.
South Braintree 85, Massachusetts

If you write maker identify as IEN - 13623

COMPRESSOR CASES for REFRIGERATORS



Welded cases for hermetically-sealed compressors are one of the many components we fabricate from steel bands.

For complete information about what American Welding can make, write today. Ask for free catalog of American Welding Facilities.

THE AMERICAN WELDING & MFG. CO.
160 DIETZ ROAD • WARREN, OHIO

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-26

Another link in America's network of modern highways opened in October. It is known as the New York State Thruway. Already new plants and new businesses and new commercial centers are beginning to grow along it. Thousands of things have gone into its layout, construction, maintenance. Thousands more will be added as the cars and trucks and years roll along.

It is interesting, and significant for everyone who wants to keep up with current progress, that the producers of every material, every facility, every piece of equipment that entered the highway from the first drawings in the engineers' offices to the dedication ribbon and the scissors that cut it are listed in Thomas' Register. It is equally interesting, and again significant, that every maker of every product employed in construction and equipping and operating of the new factories growing along that highway are also listed in the Big Books.

If you want a set, for 1955, so you also will have available for reference the names and addresses and rating of the makers of all products made in these United States, we advise making your reservation now for the new edition to come from the presses in January. Price is $15 plus handling charges. Your name will be added to the reservation list if you are in a position of responsibility for product purchase in a well rated product-using or specifying organization.

YOUR OWN NEW PRODUCTS — IEN S-27

Hundreds of new products go on exhibit at the industrial shows each year. Additional hundreds just come quietly on the market without benefit of show promotion. We know this is so because we can see it in our comparisons of the products described in Industrial Equipment News and those listed at the exhibits. We know also that a good many additional new products do not reach either us or the exhibits, possibly because your own sales department does not know of the product information service that IEN offers without cost or obligation.

Bring IEN to the attention of your sales and publicity departments. Suggest to them that they send us information on the new things you have developed for industrial use. We cannot go ahead on bare announcements or on releases that do not present basic data because our thousands of engineering, production and plant operating men are in responsible positions and look to IEN for the true product facts. We will be happy to go through your literature, your releases, your product specifications and build a story of the new products you have for sale. If you have a new product now, and prefer that we contact your publicity manager, just let us know the product name and tell us the man to write to.

Products described in IEN will be listed in Thomas' Register

If you write maker identify as IEN - 13624

Choose INDEX MILLS

The Improved Low-Cost Machines that give you
GREATER VERSATILITY!
GREATER ECONOMY!
EXTRA CAPACITY!

Model 55 Vertical Mill

You get more when you buy an Index Mill—more quality, superior features. You are not just buying a machine . . . You are investing in equipment that will deliver better results at lower cost. The ideal machines for all your

MILLING, BORING and DRILLING JOBS

Outstanding in this great line is this versatile MODEL 55 VERTICAL MILL, designed for those extra capacity jobs often found in tool and die shops; provides increased speed and feed range. Capacity ⅛" to 1½" end mills in steel, a table working surface of 32" x 9" or 38" x 9"; overall 40" x 9" or 46" x 9"

INDEX BUILDS BETTER MILLS . . . WRITE FOR LITERATURE

INDEX MACHINE CO.
545 N. MECHANIC STREET JACKSON, MICHIGAN

If you write maker identify as IEN - 13625

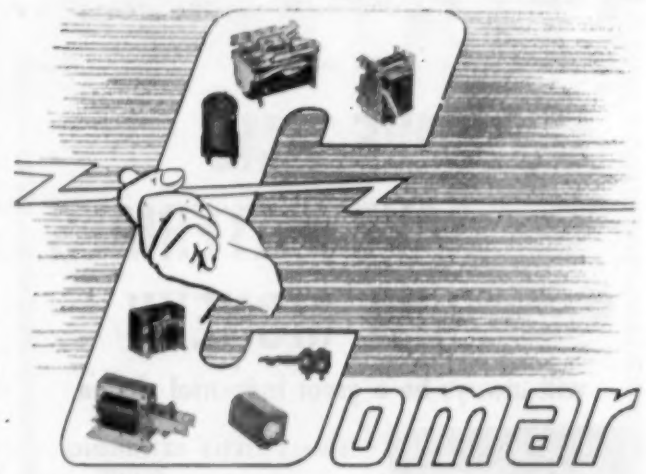
NOW
ONE CHECK VALVE for all requirements

This DURABLA BASIC CHECK Unit, added to any standard fitting (such as the reducing coupling shown here) gives you a complete valve *suitable for ANY* service. Because DURABLA Check Valves will operate in any position, they can be installed without changing existing lines. Made of stainless steel (or a combination of stainless steel and Ni-resist), they will handle practically any liquid, gas or air — at all temperatures and pressures.

Available in seven standard line sizes, from 3/8" to 2". Write for complete information.

DURABLA MANUFACTURING COMPANY
114 Liberty Street, New York 6, N. Y.
DM-10

If you write maker identify as IEN - 13626



—your best source for
RELAYS
TRANSFORMERS
SOLENOIDS
SWITCHES
COILS

Complete engineering, manufacturing and sealing facilities all in one plant, saves you time and money. Components are tailor-made to your specifications, yet you pay no more. Send for details and free catalog, now!

Comar ELECTRIC COMPANY
3349 Addison Street, Chicago 18, Illinois

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

If you write maker identify as IEN - 13627

ELECTRAN

Multi-Purpose Step-Down TRANSFORMERS

. . . one transformer or a HUNDRED

Same day delivery from our stock. From 0.1 to 5.0 K.V.A. Ten standard types plus special variations to meet your specific conditions. A transformer you can depend on from a maker you can depend on!

(We have never yet been notified of a field failure of any of these units unless overloaded or otherwise incorrectly used.)

Write for bulletin 47C

ELECTRAN MFG. CO.
1901 CLYBOURN AVENUE • CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 13628

HARDINGE
ELMIRA, N.Y.

HARDINGE-SJOGREN
SPEED
Collet Chucks

Increase machine capacity 25% to 40% with the fast action of a handwheel-operated HARDINGE-SJOGREN Speed Collet Chuck. Let your operators get the full use of your tool room lathes, engine lathes and grinders.

Five sizes: 1", 1 3/8", 1 3/4", 2 1/4", and 3 1/2"

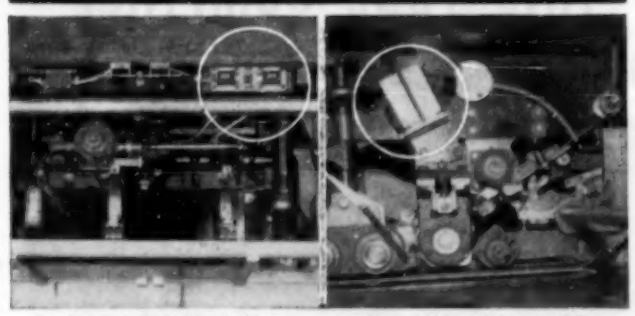
Threaded, Tapered Key-Drive, Cam-Lock, and American Standard Spindles.

HARDINGE COLLETS
For All Lathes and Automatics
Backed by 60 Years of Manufacturing Experience

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 13629

dependable NAMCO
"STELLITE"-WELD
Solenoids



Courtesy, F. L. Smithe Machine Co., Inc.

Courtesy, Universal Corrugated Box Mach. Corp.

do hard-to-get-at jobs like these *Automatically*

Whether you are synchronizing movement of the cutting board and ram on a hydraulic die press for making envelopes, or operating the taping mechanism on a pasteboard box making machine—Namco solenoids designed into the job insure better performance longer.

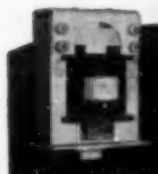
Solenoids offer you a modern, up-to-date way of doing jobs automatically, by remote control—even in cramped quarters.

Many manufacturers with a cost or space problem have found the solution in these compact reliable solenoids. They're using them in the place of expensive and bulky gear trains, levers, linkages and other mechanism. They're getting better products (usually at lower costs) by using *Namco* Solenoids to

OPERATE VALVES	MOVE LEVERS
ACTUATE CLUTCHES	PRINT SYMBOLS
OPERATE SWITCHES	OPERATE SAFETY DEVICES
CONTROL MACHINES	EJECT WORK IN PROCESS

Namco "Stellite"-weld Solenoids are built in sizes with ratings from 2½ to 25 pounds, push or pull, at maximum 1" stroke. We'll be glad to recommend the size and style best suited to your job—ask our engineers to talk it over with yours.

Engineering BULLETIN EM-52 gives details on standard Namco Solenoids.



ELECTRICAL MANUFACTURING DIVISION
The NATIONAL ACME COMPANY
170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN - 13631

Pump - Single stage centrifugal is designed to handle paper stocks

Source: GOULDS PUMPS INC.
301 Falls St., Dept. IEN, Seneca Falls, N. Y.

Ready to run **Open to service**

Assembly to simplify right or left hand installation and maintenance in service characterizes this new Fig. 3135 paper stock pump. Center lines of the discharge and intake connections are in the same vertical plane so the pump can be set up for right hand or left hand operation. A delivery elbow can be faced vertically upward or turned through 180 deg. for horizontal discharge. It connects to a telescoping sleeve, when it delivers upward, the sleeve acting as an expansion joint and also as a means to provide clearance when the pump is to be opened.

The casing is split diagonally and the upper portion can be lifted and hinged back to provide clear access to the rotor assembly. The pump takes the company's Fig. 3105 rotating element so a double inventory need not be carried when both styles of pump are in use. The impeller is non-clogging design and is provided with axial adjustment to maintain clearance. Side plates are renewable.

The liquid end is separate and can be supplied in special metals including bronze fitted, all iron, all bronze and stainless steel. Sizes range from 3 to 8 in. for capacity to 5,000 gpm. and head to 220 feet.

If you write maker identify as IEN - 13632

Caster - Hinged swivel design for application under a portable bench

Source: POLLARD BROS. MFG. COMPANY
5508 Northwest Highway, Dept. IEN, Chicago 30, Ill.

Note hinge action

A hinge, forming a part of the assembly of this new swivel caster, is fitted with a spring that holds the caster normally in operating position so it can be employed with two rigid casters beneath a work bench that is to be removed from one location to another. The hinge leaf on which the caster is assembled is curved upward to form a foot.

Pressing downward on this foot rolls the caster back on the hinge connection so the table legs that the caster has been supporting come down to contact with the floor and the table is stationary. Lifting the caster end of the table permits the spring to return the caster to operating position to resume portability. The company is prepared to supply the complete caster and table assembly as well as the casters only. Sizes are 3, 4 and 5 ft. in length by 24 or 29 in. in width.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13633

NEW CATALOG

tells how to get the NEW LOOK in design

This new 28-page catalog shows you how you can use Penmetal expanded metal to obtain, for your products, that smart, clean, attractive appearance that typifies modern trends in design.

Here, you will find mesh sizes, weights, gauges, and dimensions, as well as many illustrations showing how Penmetal expanded metal is used to add beauty, strength and utility in hundreds of applications.

Ask for a copy of catalog 502-EM. No cost or obligation.

PENN METAL COMPANY, INC.
General Sales Office: 205 East 42nd St., New York 17, N. Y.
Plant: Parkersburg, W. Va.

PM-44

If you write maker identify as IEN - 13634

We make Multigrip to help you stop
Costly accidents in your plant or shop:
To help you reduce the extra cost,
Of slips and falls and man-hours lost.
And frequent repairs and replacing the floor,
Will be things of the past to plague you no more.
So for long, cost-less life with none of these cares,
Install Multigrip . . . on floors, aisles and stairs.

USS
multigrip
USS
FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 4-1070A

UNITED STATES STEEL

If you write maker identify as IEN - 13635

new

Possibilities for Product Improvement . . . with LAPMASTER Precision Flatness and Finish

An ever increasing number of manufacturers of all types of products have found that by specifying lapped finish on mating surfaces they have been able to eliminate gaskets or improve product performance. Precision flatness and finish on a production basis is easily obtained with the Crane Lapmaster. Tolerances to one light band (.0000116") or less—micro-inch finishes of 2 to 3 RMS can be maintained consistently. Learn more about the possibilities of production lapping and the interesting subject of measuring flatness. The illustrated fact filled booklets are yours for the asking. Write today.

CRANE PACKING CO., DEPT. IEN-12
1815 CUYLER AVE., CHICAGO 13
"Protected by U. S. and Foreign Patents"

JOHN CRANE
CRANE PACKING COMPANY

If you write maker identify as IEN - 13636

ALGRIP FLOORING STOPS ACCIDENTS—PAYS FOR ITSELF IN INSURANCE SAVINGS

If plant accidents are hiking your costs and cutting production, end both with ALGRIP Abrasive Rolled Steel Floor Plate. For ALGRIP *stays* non-slip even on steep inclines—actually pays for itself in savings on insurance premiums.

Hundreds of tiny abrasive particles impregnated *to a controlled depth of penetration* into tough, lightweight steel plate give each square foot of ALGRIP a "grinding-wheel" grain surface that can't wear out because hard use only exposes new gripping particles . . . an exclusive ALGRIP feature.

Investigate ALGRIP now and begin cutting costs. Send today for full details. There's no obligation.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate.*

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 13637

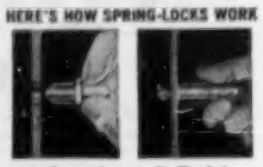
This steel insert, molded into plastic Spring-Locks, gives strength where it's needed—at the point of load or impact—eliminates doubts concerning the strength of plastic at these critical points.

The design flexibility of plastic Spring-Locks makes them ideal for a variety of uses... shelf supports, washer cover knobs, drawer pulls and many others. Spring-Locks cut material and assembly costs, too. No special tools, bolts, nuts or threadings required. Just a half-turn locks them securely.

Many standard shapes and sizes of Simmons Spring-Locks are available or any shape head can be designed. Send for full details.

Any shape head can be molded in metal or plastic.

HERE'S HOW SPRING-LOCKS WORK



1. *Insert* 2. *Twist*
Steel insert carries load.

SIMMONS FASTENER CORPORATION
1788 North Broadway, Albany 1, N. Y.

Simmons Spring-Lock ★ QUICK-LOCK ★ ROTO-LOCK

If you write maker identify as IEN - 13638

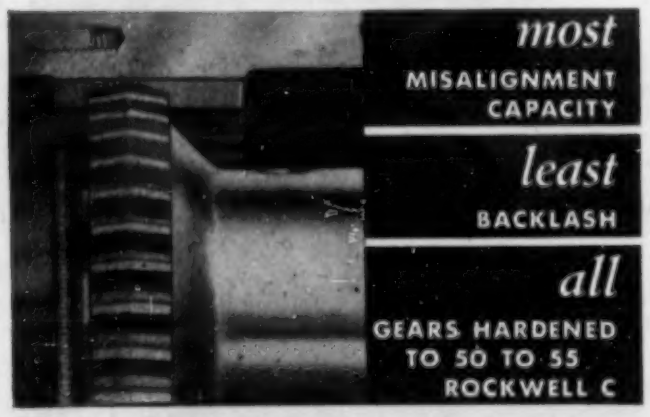
TINY DIE-CASTINGS cut small parts cost

Small zinc die-castings—1000 per lb. to 3 per lb.—made at high speed on special automatic machines. Method combines design latitude of die-casting with the speed of fully-automatic processes. Possibilities to users: cut piece costs . . . consolidate two or more parts into one . . . reduce machining operations. *Small Parts Folder and Samples* on request.

DOLLIN CORPORATION
630 So. 21st St., Irvington 11, N. J.

If you write maker identify as IEN - 13639

AJAX DIHEDRAL COUPLINGS



Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for action, each to provide ideas for you.

If you write maker identify as IEN - 13640

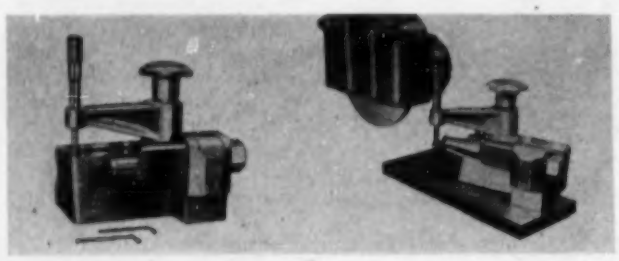
Gears, from a production line, enter the left hand side of this new classifier on a continuous belt conveyor. The gears pass between a rigidly mounted double face driving gear and a pivotally mounted single face driven gear. If the production gears meet size specifications they continue along the conveyor belt to be unloaded at the end. If they fail to pass inspection the master gears provide the signal that actuates a corresponding rejection gate to sweep the unsuitable gear to scrap or to a salvageable chute. The gage also can be employed to shut down a gear producing machine in the event of recurring gear size errors. Manufacturer is Michigan Tool Co., 7171 E. McNichols, Dept. IEN, Detroit 12, Mich.

If you write maker identify as IEN - 13641

Manufacturers, large or small, can replace obsolete and idle equipment with efficient new standard or special equipment by employing the Rentool-RentAll plan. It has been devised by Industrial Renting Corp., 132 54th St., Dept. IEN, Brooklyn 19, N. Y. The plan is flexible and is based on the needs of the individual manufacturer. It has been checked by machine tool experts and provides a number of alternatives including trade-in of idle equipment to apply toward rental payments, option to purchase at any time during the leasing arrangement, option to renew at reduced rental rate and a sliding scale of payments. Rental periods range from 3 months to 10 years.

If you write maker identify as IEN - 13642

Correct offset can be set by a new micrometer fixture, developed by Scully-Jones & Company, 1901 S. Rockwell St.,

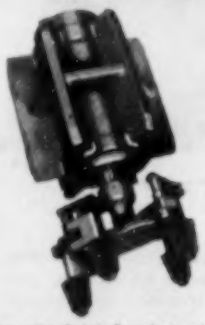


Dept. IEN, Chicago 8, Ill., to grind circular form tools. The fixture applies on any toolroom surface grinder fitted with a magnetic chuck, or it can be bolted to the grinder table. Interchangeable adapters are available to mount various types of cutter. List price, without the adapters, is $130.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13643

LAGONDA TUBE CLEANERS



Motor with Quick Repair head and sleeve for 10" straight pipe. A universal coupling would be used between the motor and head for curved pipe cleaning.

This rugged, air or steam driven motor, teamed with a wide selection of cutter heads, will clean any pipe up to 20" I.D. New or used . . . straight or curved. It makes short work of rust, weld spatter, sand, mill scale, etc. Yet, the tough cutter heads will not mar inner pipe surfaces. They are widely used throughout the pipe manufacturing and fabrication fields today.

For full details see your local Elliott representative or write for Bulletin Y-34. Elliott Company, Springfield, Ohio.

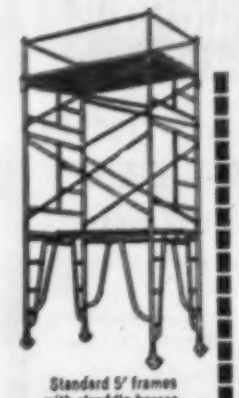
Y4-11

ELLIOTT Company

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS
CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN - 13644

WACO ROLLING TOWERS DO DOUBLE DUTY

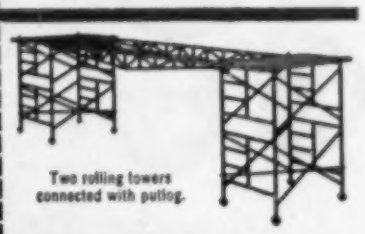


Standard 5' frames with straddle braces.

Completely standardized units give you complete flexibility. Same basic units can go straight up for high walls and ceilings or straight out for a long low working platform! High carbon steel construction gives added safety. Exclusive Waco Speed-lock fastener saves time on every scaffolding job.

Your local Waco Representative can show you how to save time and money with Waco double duty rolling towers.

30" frames for narrow areas.



Two rolling towers connected with putlog.

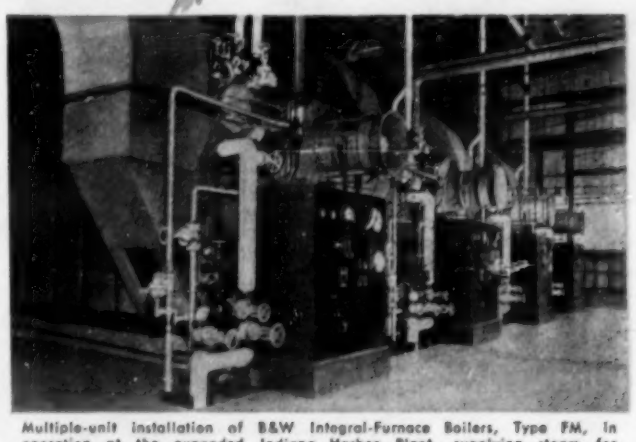
SALES • RENTALS • ESTIMATES

WACO MANUFACTURING COMPANY
3567 Wooddale Ave. • Minneapolis 16, Minn.
WORLD'S FASTEST SCAFFOLDING
Waco-May Co. Los Angeles — Licensees: Armson Iron Works Windsor, Canada

If you write maker identify as IEN - 13645

keeping steam cheap . . .

THE YOUNGSTOWN SHEET AND TUBE COMPANY installs B&W Type FM Boilers



Multiple-unit installation of B&W Integral-Furnace Boilers, Type FM, in operation at the expanded Indiana Harbor Plant, supplying steam for processing operations and heating in the cold-reduction plant.

When The Youngstown Sheet and Tube Co. decided to extend its existing Indiana Harbor Plant at East Chicago, Ind., it made a choice between the installation of large or small boilers to meet the increased demand for steam.

Impressed by the compactness as well as the relative cost per pound of steam, company engineers selected four B&W Type FM Units—leaving space for a fifth unit—rather than two larger boilers, and, as a result, effected substantial savings in both installation and operation. Placed in service in November 1953, each boiler is oil-fired and has a steam capacity of 28,000 lb per hr. The four units are being operated in conjunction with three older B&W Boilers of greater capacities, to produce steam for both plant processing and heating.

The already large and growing acceptance of the B&W Type FM Boiler for a wide variety of industrial, commercial, institutional, and other applications rests on a solid record of service satisfaction . . . is reflected by the number of units now in service or on order, having a total steam capacity exceeding 9,000,000 lb per hr. Ideal for small to medium-sized plants, the FM Boiler is often selected even for larger installations—as at The Youngstown Sheet and Tube — to assure efficient, economical operation while avoiding the complete field erection and close operating supervision required by big boilers. It is available in standard sizes for loads ranging between 2900 and 36000 lb of steam per hr at pressures to 235 psi. Special units are obtainable for higher pressures.

The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX BOILER DIVISION

G-664

If you write maker identify as IEN - 13647

NOW...."flexible piping" with TEFLON's heat and corrosion resistance

FLUOROFLEX†-T assemblies combine the outstanding advantages of Teflon* with those of flexible conduit construction. Here's what this gives you:

- Fluoroflex-T (Teflon compound) tube . . . chemical-proof, non-swelling . . . absorbs vibration
- Flexibility that doesn't change from −100° to +450°
- Stainless steel braid–for 1000 psi working pressures and for high external corrosion resistance
- Compact fittings swaged to armor and tube–won't blow off
- Light weight! Space saving! Non aging!

Write for Bulletin FH-1.

**DuPont trademark for its tetrafluoroethylene resin.*
†Resistoflex trademark for products from fluorocarbon resins.

RESISTOFLEX *corporation*

Belleville 9, New Jersey

If you write maker identify as IEN - 13648

Write for bulletins on this rugged money-saving materials-handling equipment

Phillips equipment has proved its merit in thousands of applications everywhere. Ruggedly built and well designed, it withstands hard usage for longer periods. You'll profit by having Phillips literature on file.

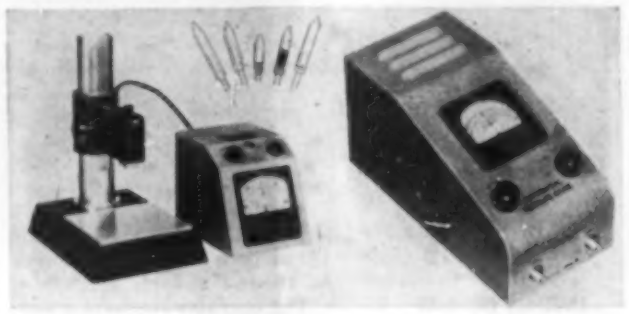
Phillips
CORPORATION

(formerly Phillips Mine & Mill Supply Co.)
Manufacturers Since 1863
15 Arch Street, Carnegie, Pa.

IDEAS for YOU—*Continued*

If you write maker identify as IEN - 13650

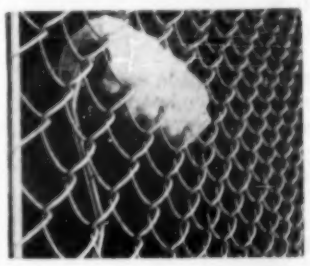
A micrometer comparator and a differential pressure gage are two initial instruments developed by Decker Aviation



Corp., 1361 Frankford Ave., Dept. IEN, Philadelphia 25, Pa., to employ its new ionization transducer. The element will measure any phenomenon, that can be resolved into changes of capacitance, resistance or inductance, to include functions such as acceleration, linear and angular displacement, temperature, liquid quantity or level, conductivity, humidity. You are invited to submit your gaging, signaling or control requirements for equipment recommendations and production, employing the transducer element.

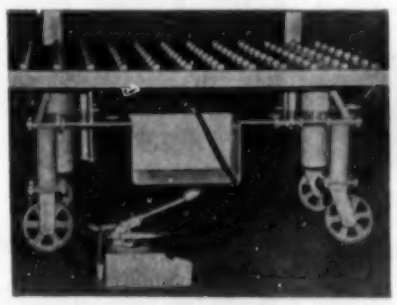
If you write maker identify as IEN - 13651

Lambskin, with a nap 1¼ in. in thickness, is fitted over a solid wood core and the core applies on a ⅜-in. aluminum wire frame equipped with a wood handle in this new Bulldozer paint roller. The roll can be removed and replaced quickly on the frame. Two sizes measure 7 and 9 in. in width. The roller is made by American Products Co., 3308 Edson Ave., Dept. IEN, New York 69, N. Y., for use on wire fences, raw cinder blocks, cement, rough stucco, textured surfaces.



If you write maker identify as IEN - 13652

Heavy steel sheets are elevated and manipulated with the assistance of special design of the portable elevating table manufactured by Raymond Corporation, 328-127 Madison St., Dept. IEN, Greene, N. Y. Ball transfers set into the table top permit one operator to position plates measuring 48 by 72 in. and weighing 1 ton. The table top is adjustable from 36 to 48 in. above the floor by operating a foot hydraulic pump. Table mounting, on 10-in. casters, permits the assembly to roll freely with a capacity load.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13653

ROBINSON METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering Pumps may be the *economical* solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON
P.O. Box 47
95 PARK AVE. • MUTLEY 10, NEW JERSEY

If you write maker identify as IEN - 13654

BUILT FOR THE JOB Bond CASTERS

for faster, easier materials handling

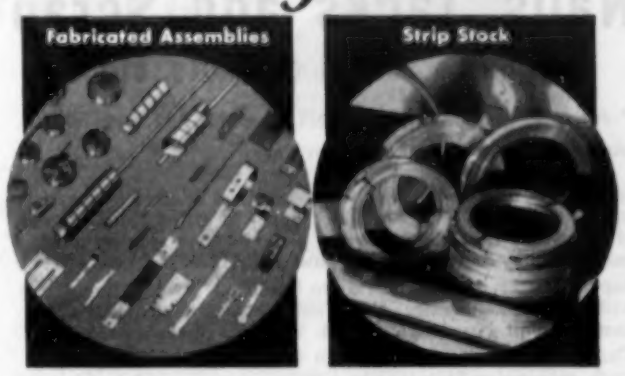
THE kangaroo has a real handling problem . . . but Nature gave it the jump on its neighbors with a handy carrying pouch, built for the job. And you can get the jump on your materials handling problems by specifying Bond built-for-the-job Casters. For dependability, economy and trouble-free service, your best buy is Bond!

See your industrial distributor—he has the right Bond Casters built-for-your-jobs.

BOND FOUNDRY & MACHINE CO.
Manheim, Pa.

If you write maker identify as IEN - 13655

In Any Form



General Plate TRUFLEX® Thermostat Metals

Give Accurate Temperature Response . . . Cut Costs

General Plate *Truflex* Thermostat Metals provide a sure way to get reliable performance and at the same time cut costs of products requiring temperature control, indication or compensation.

Advanced General Plate production methods coupled with the best equipment available insure close tolerances on all properties and dimensions. This maintains positive consistency in thermal, mechanical, and electrical performance. With no variation from lot to lot rejects are eliminated, costly adjustments are minimized.

General Plate *Truflex* fabricated assemblies are engineered and manufactured to your specifications, ready for installation into your products. They eliminate costly fabrication problems . . . needless special equipment . . . experimental work and expensive calibration.

However, if you prefer to make your own assemblies, General Plate *Truflex* Thermostat Metals are available as strip in extra long coils or flat cut lengths manufactured to your material specifications.

Write for information and engineering assistance.

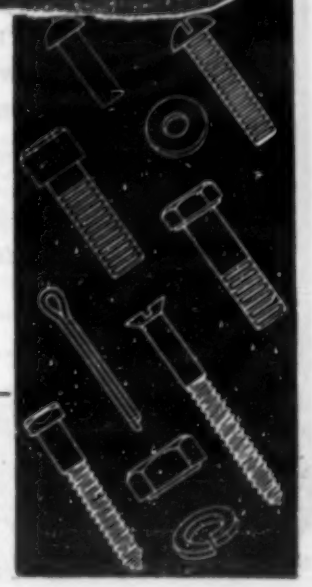
METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
712 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN - 13656

STOP CORROSION with HARPER

EVERLASTING FASTENINGS
BY THE DOZENS OR BY THE MILLIONS

If you use fastenings of brass, bronze, copper, monel, aluminum or any stainless steel, you can get what you want from Harper. Over 7,000 items stocked—all backed by Harper's advanced metallurgists and skilled engineers. See your Harper Distributor.



HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog.

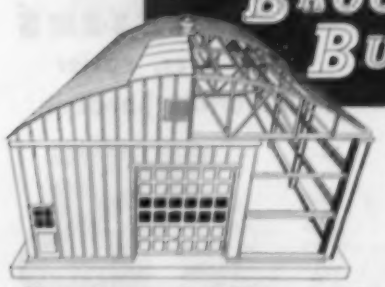
Name.....
Address.....
City.....*State*.....

If you write maker identify as IEN-13657

GET UP TO 30% MORE BUILDING

for the same price with

BROOKVILLE BUILDINGS



ERECTED AT PRE-ENGINEERED SPEED TAILORED TO YOUR REQUIREMENTS

You get extra building space for the same price with Brookville All-Steel, Fully-Insulated Buildings because Brookville Buildings cost up to 30% less than standard constructions, yet are quality equal.

Single and multiple structures are available in an amazing choice of spans, lengths, heights, door and window arrangements, and ready as you desire for architectural frontal and interior treatment.

Write today for Folder A

BROOKVILLE MANUFACTURING COMPANY
P.O. BOX 67 BROOKVILLE, PA.

If you write maker identify as IEN-13658

Super Sweeper Snaps Up Nails, Tacks and Scrap

From Factory Floors, Lots, etc.

New lightweight **PERMANENT MAGNET** *receives enthusiastic reception for maintenance help.*

Increasing problem to maintenance executives caused by dangerous tramp iron is solved by the Eriez Super Sweeper. Harmful, and often expensive, staples, nails and pieces of scrap iron are quickly snapped up by Super Sweeper's powerful ALNICO action.

Super Sweeper is light and easy to handle . . . sweeps large areas with maximum efficiency. Use it indoors or outdoors. It is a self-contained unit. No electric current. Your first cost is your last cost!

Thanks to Super Sweeper's design it can be PULLED by a jeep, truck, etc. . . . or PUSHED by a man . . . or SUSPENDED from a lift truck. The tubular steel handle can be removed. Wheels, fitted with puncture-proof 8.00" x 2" tires, are also removable.

Three strengths and four magnet widths (24", 36", 48" and 60") make certain that there is a Super Sweeper to fit your exact requirement. Write for Bulletin on this versatile trouble-saver.

ERIEZ
MANUFACTURING COMPANY
81M Magnet Drive, Erie, Pa.

ERIEZ

If you write maker identify as IEN-13659

helps prevent colds

Production line and office workers can now work in absolute comfort

The new low priced ELECTRO MAT throws off a gentle warmth that keeps workers healthy, happy and comfortable. 14" x 21" portable foot warmer is safe and economical . . . consuming less power than a 75 Watt light bulb. It is made of high quality neoprene rubber.

Attention Employers

Increase the efficiency of your employees and help prevent colds which cause absenteeism by equipping each employee with an Electro Mat.

Mail check or money order today
Only **$6.95** f.o.b. factory

IMPORTANT SAVING: If 6 or more Electro Mats ordered price is only $5.95
Please send me: ☐ Electro Mat at $6.95 each.
Enclosed is my check ☐ money order ☐
☐ C.O.D. I am enclosing $1.00. Will pay postman balance of $5.95 plus C.O.D. and freight charges.
Name _____
Street _____ Zone ____
City _____ State _____

10 Day Money Back Guarantee
INTERSTATE RUBBER PRODUCTS CORP., Dept. 111
908 Avila St., Los Angeles 12, California

Dealer Inquiries Invited.

If you write maker identify as IEN-13660

Battery Charging - Automatic unit for use on industrial truck batteries

Source: McCOLPIN-CHRISTIE CORP.
3410 W. 67th St., Dept. IEN, Los Angeles 43, Calif.

Bulletin BC-A-55

An isolating transformer and a selenium rectifier, in this new charger, with magnetic amplifier control, are assembled with battery lead connections, an on-off switch and a meter for automatic operation in charging a lead acid or nickel cadmium storage battery. The unit is available for 18, 24, 32 and 36-volt batteries in capacities to 170 ampere hours. Operation is on 110-volt 60-cycle ac.

The operator connects a battery and moves the switch to "on" position. Then he can leave the charger as it does not require further attention. The charging current is held steady near full rated value until the gassing point of the battery is approached but not reached. At this point the charger gradually adjusts the current rate downward to settle finally at a safe precisely regulated end value. The meter indicates the state of charge and shows when the battery is fully charged and ready to be returned to service.

If you write maker identify as IEN-13661

Heat Treating - Carburizing compound prevents formation of scale on steel

Source: PANNIER CORPORATION
207 Sandusky St., Dept. IEN, Pittsburgh 12, Pa.

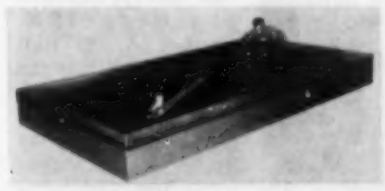
Technical data upon request

Steelaide trade names a new carburizing compound that is coated on metal over areas that are to remain soft during carburizing operations. Application is by dipping or brushing. The work is then heat treated and the protective coating is removed by immersion in boiling water for 20 to 30 minutes. The material is supplied in 1, 5 and 25-16 containers.

If you write maker identify as IEN-13662

Layout - Granite surface plate, one piece sizes to 72 by 144 inches

Source: LAWLEY GRANITE SURFACE PLATE CO.
2000 Wyoming Ave., Dept. IEN, Wyoming, Pa.



Accuracy to 0.00005 inch

Black diabase granite, employed in the company's line of surface plates, is now available in single piece sizes to 72 by 144 in. with mounting on neoprene pads to insulate against vibration. The stone features dense uniform structure free from internal stress. It will not warp as a result of shock or temperature change. It is highly resistant to abrasion and impact. Abrasives cannot become imbedded in the non-glare surface.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13663

A NEW PROCESS..

ultrasonic machining

For Cutting Hard or Brittle Materials Like:

ALNICO	CERAMICS	QUARTZ
BORON CARBIDE	FERRITES	TUNGSTEN
CARBON	GLASS	TUNGSTEN CARBIDE
	MOLYBDENUM	

HOW CAN YOU USE IT . . . . . ?

Ultrasonic Abrasive Machining is finding ready application in many fields for forming, grinding, slicing, trepanning or cutting shaped holes in hard or brittle materials. Investigate the possibilities in your field. Write for descriptive bulletin and information on specific applications. Please specify materials to be worked and describe operation.

Address Inquiries to Dept. 6120-IN12

RAYTHEON
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL OPERATIONS, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN-13664

THE HI-GAIN Industrial **POCKETSCOPE** BY WATERMAN

MODEL S-14-A

Identified by its hi-sensitivity and incredible portability, S-14-A POCKETSCOPE now permits "on-the-spot" control, calibration and investigation of industrial electronic, medical and communications equipment. Direct coupling without peaking, used in the identical vertical and horizontal amplifiers, eliminates undesirable phase shifting. Designed for the engineer and constructed for rough handling.

Wt. 12¾ lbs. 12" x 5¾" x 7"

Vertical and horizontal channels: 10mv rms/inch, with response within—2DB from DC to 200KC and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization from ½cps to 50KC with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 23, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE.

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN-13665

FREE!

Reference file on New Morse CAM CLUTCHES

Get full details about the unusually compact and adaptable Morse Cam Clutches—highly perfected, accurate devices which positively lock to transmit power in one direction, but which overrun freely in the opposite direction.

This free reference file includes Cam Clutch Catalogs C11-54, C12-54, supplemental data sheets and a durable binder.

You will receive complete information about the construction, functions and operating principles of cam clutches. In addition, you will get a simplified form listing the information required to obtain an engineering recommendation for your specific application. **Send today for *CAM CLUTCH FILE.***

MORSE

MORSE CHAIN COMPANY
7601 Central Avenue, DETROIT 10, MICHIGAN

If you write maker identify as IEN-13666

HOW TO PACKAGE SMALL ITEMS

Safely . . . with Visibility

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.

Write for samples and details today.

LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as IEN-13667

Cuts Pump Maintenance Costs

MORRIS TYPE R SLURRY PUMP

REMOVE 4 BOLTS

...and there's the impeller!

Without disturbing the suction, the discharge piping or the bearings, you can inspect, unclog or remove the impeller on the Morris Type R Slurry Pump. Simply loosen 4 *outside* clamping bolts and pull off the end cover. Cuts maintenance costs and lay-up time to a bare minimum by getting the pump back in service quicker.

The Morris Type R Slurry Pump offers many other features you'll appreciate. Write for specifications, capacities, performance charts and other helpful information. Ask for Bulletin 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

If you write maker identify as IEN-13668

HOW XEROGRAPHY
(ZE-ROG-RA-FEE)

cuts duplicating costs $18,000 a year

at Bausch & Lomb Optical Co.

SPEEDS PAPERWORK

Ray-Ban Sun Glasses are an exclusive development of Bausch & Lomb.

Bausch & Lomb, world renowned for its contributions to optical progress, has cut its duplicating costs $18,000 a year since installing XeroX® copying equipment to prepare offset paper masters by xerography.

Bausch & Lomb saves $1,000 a month in its Stenographic Department. In the Factory Engineering Department of the Instrument Division, a saving of approximately $500 a month is being made. In 1952 Bausch & Lomb changed its Production Control System and reduced the number of system steps from 15 to 10 using a XeroX-offset combination.

Bausch & Lomb is one of the many hundreds in business, industry and government using the magic of xerography to speed the flow of paperwork and to cut duplicating costs.

Anything written, typed, drawn or printed can be reproduced with photographic accuracy in about 3 minutes onto an offset paper master for runoff of multiple copies on an offset duplicator. Original copy may be enlarged, reduced or reproduced same size by xerography in XeroX copying equipment. Copies can be made from one or both sides of original material by xerography.

For use in diazo type machines, translucent intermediates can be made from any original subject in the same speedy way.

There is no limit to the versatility of the dry, electrostatic xerography process in paperwork duplicating applications.

Write for proof of performance folders showing how Bausch & Lomb and companies of all kinds are cutting duplicating costs and speeding paperwork with xerography.

Also available, movies showing xerography at work.

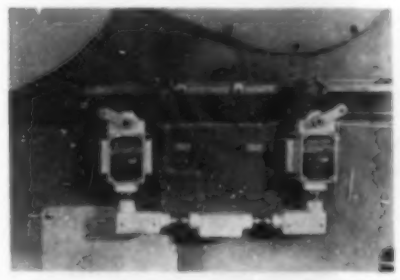
THE HALOID COMPANY
54-56X HALOID STREET, ROCHESTER 3, NEW YORK
BRANCH OFFICES IN PRINCIPAL U.S. CITIES AND TORONTO

XEROGRAPHY
THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.

If you write maker identify as IEN-13670

Switch - Snap acting design is lever operated for limit duty

Source: R. B. DENISON MFG. CO.
102 St. Clair Ave., Dept. IEN, Cleveland 13, Ohio



Catalog, "Loxswitch"

The company announces improvement in its Loxswitch Series L-100 limit switch, previously described IEN-13316-53, to permit 70 deg. of over-travel in either direction of the operating lever. The new design provides an additional safety factor and increases protection of the switch against damage resulting from severe over-travel conditions. The new trigger type mechanism employs four rotating parts and provides fast accurate "break," adequate contact pressure and minimum "bounce."

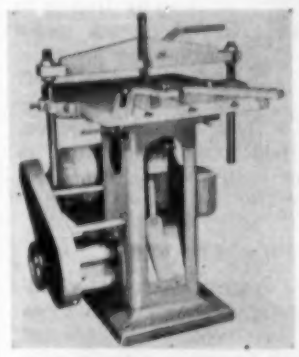
Standard construction is a single-pole double-throw switch with quick-break cushion-make silver contacts. It is operated by the wheel equipped lever mounted in graphite bronze bearings. The action builds up pressure in a spring and releases this pressure at a predetermined point so the switch rotor breaks one pair of contacts and closes the opposite pair at an exact point, independent of speed of the lever movement.

The switch can be employed as normally open or normally closed in either direction or as a maintained contact in both direction. It also is available as a double-pole unit with both circuits normally closed or open or in three-pole arrangement with two closed and one open or one closed and two open. Four contact ratings are 6 to 1.2 amp. on 110 to 600-volt ac. in standard design.

If you write maker identify as IEN-13671

Keyseating - Broaching machine for internal keyways, 1/8 to 1 inch

Source: NORTHFIELD FOUNDRY & MACHINE CO.
Dept. IEN, Northfield, Minn.



Model K-6

Work of any diameter, that can be clamped to the table of this new machine, can be cut, grooved or slotted by the action of a motor driven broach. The machine will cut straight or tapered internal keyways measuring 1/8 to 1 in. in width. The work holding clamp is designed so it can be swung out of the way for loading. It also is provided with a depth stop. The hand wheel permits positioning the cutter when work is being set up and to move the machine to adjust the cutter.

Standard equipment includes a 1-hp. three-phase 60-cycle motor for operation on 220 or 440-volt 60-cycle ac. at 900 rpm. A 2-hp. motor can be specified. Set up can be made to cut a tapered keyway with a taper at 1½ in. to the foot. The 16-in. cutter will machine a keyway 4 in. in length. A 24-in. cutter will cut an 8-in. keyway. Bushings are available measuring ½ to 5 in. by 16ths to apply with three sizes of collar.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13672

SPEED CONTROL
WIDE RANGE! LOW COST!

new catalog free

Just off the press! New illustrated catalog describes SPEED SELECTOR'S new line of Variable Pitch Sheaves. These sheaves are for extra-wide range of speed control on fixed centers...also completely new designs for low speed applications. Save time, trouble, money...WRITE FOR CATALOG No. 44 TODAY.

SPEED SELECTOR INC.
118-A NOBLE COURT • CLEVELAND 13, OHIO

If you write maker identify as IEN-13673

SAVE TIME • STEPS • MATERIALS with the ONE HAND

HANSEN TACKER

• FASTER
• BETTER } Tacking
at
• LESS COST

TAKE-UP TAB

QUICK OPENING
SAVES TIME
IMPROVES SERVICE

REG. U.S. PAT. OFF.

HANSEN

ENGINEERED FOR SERVICE

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! Hansen saves time, steps, and materials — operates faster — saves back-tracking — ready for instant, continual use.

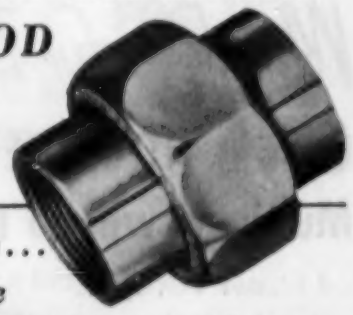
USE HANSEN VEST-KIT FOR A READY SUPPLY OF STAPLES — as near as the vest pocket. No back-tracking. No delays. Insist on Hansen Staples in the BLUE BOX. Staples in 80 sizes.

A. L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE., CHICAGO 40, ILL.

Request Booklet ...TODAY

If you write maker identify as IEN-13674

NO GALLING with the new ROCKWOOD UNION #603



Outperforms others . . . gives longer service

. . . no other Union like it

There's no galling in "making up" with Rockwood's remarkable Union #603. It's unique among unions.

The male seat of this new Union is specially treated to give it a greater degree of hardness than the female seat. Users praise this Union's longer service—point out other advantages: higher resistance to rough working conditions; interchangeable parts; plug-type ball-to-cone design eliminates sharp corners or edges, does not scratch when making up in tight places; exclusive "Rockwoodizing" protects entire Union against corrosion.

Both seats of corrosive-resistant AISI molychrome steel, forged in place and bond-locked under 100M and 400M pound pressure. Get complete facts.

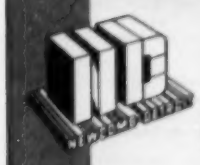
ROCKWOOD

ROCKWOOD SPRINKLER COMPANY
432 HARLOW STREET
WORCESTER 5, MASSACHUSETTS

If you write maker identify as IEN-13675

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD. DUNDAS, ONT. DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St.,
Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN-13676

DARNELL CASTERS & WHEELS

for TOUGHEST DAILY SERVICE

Always SWIVEL and ROLL

Save Money, Time, Floors and Equipment..

STRING GUARDS... Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED... by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS... a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION...

all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

Free Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
56 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN-13677

Why Pay for Two Valves?

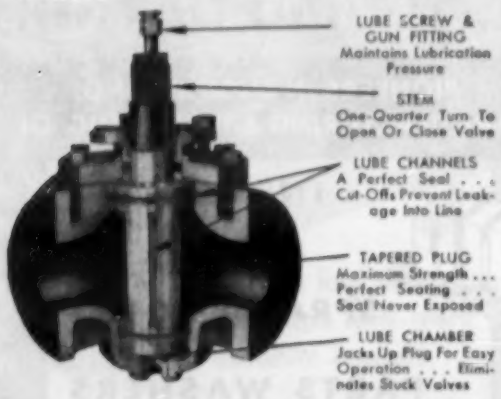
ONE ROCKWELL-Nordstrom Multiport will do the job better!

FREE

Send for this FREE Multiport valve Chart that shows how Rockwell-Nordstrom Multiport valves can cut your costs

Eliminating unnecessary valves is *real* economy. But Nordstrom *Multiports* give you even greater savings because pressurized lubrication seals seating surfaces, prevents galling and eliminates wearing friction. Available in semi-steel and special alloys, Nordstrom *Multiports* and *Straightways* mean long life at lowest cost. Get the complete story. SEND THE COUPON TODAY. Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Canadian Valve Licensee: Peacock Brothers Limited



Rockwell-Nordstrom Valves

Lubricant-Sealed for Positive Shut-Off

Rockwell Manufacturing Company Dept. 5433F
400 North Lexington Avenue, Pittsburgh 8, Pa.

☐ Please send me a *Multiport Valve Chart.*
☐ Please send me a copy of the Rockwell-Nordstrom Bulletin V-217

Name _____
Company _____
Address _____ Street
City _____ Zone _____ State _____

If you write maker identify as IEN-13679

Ventilating - Exhaust unit discharges bad air, fumes through roof

Source: CHICAGO BLOWER CORP.
9867 Pacific Ave., Dept. IEN, Franklin Park, Ill.

Bulletin GPE-103

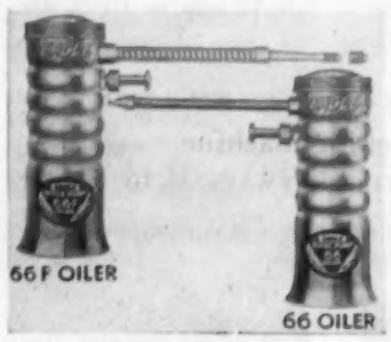
Welded impeller, with reverse curved blades, is driven by direct or belt connection to a motor in the housing of this new Gyra-Flo Type B ventilator. The impeller employs a ¼-in. back plate and ⅛-in. blades. It is balanced statically and dynamically. It is available in stainless steel to order.

The direct drive rates 830 to 2,590 cfm. The belt connected assembly rates 1,420 to 29,750 cfm. Static pressure range is ⅛ to ¾ in. in both cases. The motor is isolated from the exhausting air and can be furnished for standard current characteristics in open and closed or explosion proof design. Approved safety disconnect switches are standard equipment. Air or motor operated louvers can be supplied. Their blades are felt lined to eliminate noise upon closing.

If you write maker identify as IEN-13680

Lubricating - Hand pump oiler for utility use, holds six ounces

Source: EAGLE MFG. COMPANY
25th & Charles St., Dept. IEN, Wellsburg, W. Va.



Seamless brass

Flexible steel spout, with a threaded brass cap to seal the tip when the oiler is not in use, features the new No. 66F unit. No. 66 is fitted with a seamless brass spout and a detachable brass cone shaped tip. Depressing a plunger on the body delivers oil drop by drop or in a full stream under considerable pressure. The top cap screws off for refilling. The base is flared so the oiler can be set up without danger of tipping. A measuring attachment can be added, when specified, to control the amount of oil ejected on each pump stroke.

If you write maker identify as IEN-13681

Electronic equipment is protected against shock and vibration and, at the same time, can be positioned and connected quickly on this new isolator and connector equipped mounting base. The center of gravity lies in the diagonal plane passing through the resilient elements. This and similar equipment are available to order from Robinson Aviation, Inc., Teterboro Airport, Dept. IEN, Teterboro, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13682

EAST SIDE . . . WEST SIDE . . . all around the plant

INSTANT HEAT
. . . IN A HURRY
WHEREVER . . . WHENEVER NEEDED

At any one of a hundred spots around any plant, you can count on safe, dependable, clean heat . . . at the flick of a switch . . . whenever the piercing cold of winter threatens to tie-up men or machines. For space heating, spot heating and emergency heat at any time . . . warming personnel, thawing frozen machinery, in warehouses or unheated sections of your plant, and pre-heating cold engines . . . you can count on Silent Glow Portable Heat.

The Silent Glow Oil Burner Corp. 867 Windsor St., Hartford 1, Connecticut

EIGHT MODELS . . . *radiant or forced air . . . 168,000 to 420,000 BTU per hr. Send for details today.*

A MODEL FOR EVERY NEED

SILENT GLOW *Portable* HEAT
RUGGED AND RELIABLE ALWAYS

If you write maker identify as IEN-13683

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Other models available

WEBSTER INSTRUMENT INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

If you write maker identify as IEN-13684

"More Power To You"

when you have to Cut, Ream or Thread Pipe

New **RIDGID**

400A Power Drive with new *SPEED CHUCK*

. . . A bargain in efficiency and easy operation!

The amazing new chuck on this 400A is not just another hammer chuck. It operates on a new principle of gripping pipe and rod. Guaranteed to hold any kind of pipe securely both ways, forward or reverse. No slipping, even in driving geared tools. Extra easy to operate: close jaws on work with hand wheel, sock lightly—motor action makes it grip tighter; releases easily by turn of hand wheel. Thousands of these efficient, powerful, durable units in use everywhere. For most service for your money, ask your Supply House for the new 400A. (No. 400 with lathe-type chuck also available.)

THE RIDGE TOOL COMPANY, ELYRIA, OHIO, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN-13686

Free 12-PAGE BOOKLET

helps you choose the Right HOOD Glove for Each Job!

This useful Guide shows the comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic-Coated Gloves. It illustrates and fully describes the complete line of Hood Industrial Gloves . . . the choice of industry for every job.

Write for your copy today

HOOD RUBBER CO.
A division of the B. F. Goodrich Company
Watertown, Mass.

If you write maker identify as IEN-13687

A Faster, Stronger Tie for Less Money

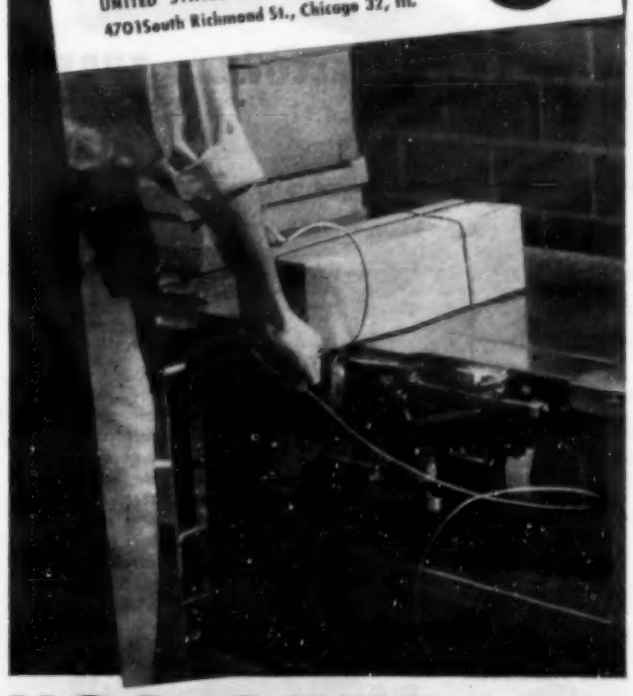
USS GERRARD STRAPPING

• We'll waste no time getting to the point. It's true. Gerrard Round Steel Strapping actually costs about 40% *less* than any other form of metal reinforcement. And it's easier to apply because it's flexible . . . conforms to any shape . . . clings snugly to the package. As for speed—the semi-automatic Model "Q" machine shown below snaps out 12 to 15 secure, pilfer-proof ties per minute.

You can realize an additional savings by making Gerrard your headquarters for steel strapping—Round *and* Flat. One source buying saves freight charges and reams of paper work.

Look into it now. A Gerrard engineer will be glad to point out to you all the specific applications and advantages of Gerrard Round and Flat Steel Strapping that will *save you money.*

GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL CORPORATION
4701 South Richmond St., Chicago 32, Ill.



USS GERRARD
ROUND STEEL **STRAPPING** FLAT STEEL
UNITED STATES STEEL

If you write maker identify as IEN-13689

Polishing - Rubber contact wheel for resilient abrasive belt support

Source: CHICAGO RUBBER CO.
2620 Clybourn Ave., Dept. IEN, Chicago 14, Ill.

Cushions the belt

Type TF-54 designates a new back-up wheel made of red rubber compound that is resistant to attack by abrasives and oils and can be run at speeds to 10,000 fpm. The rubber is supported on a metal hub and has integral rubber side flanges to prevent edge wear.

The face carries alternating ¼-in. lands and ¾-in. recesses over which the abrasive belt is applied. Rubber can be specified in 20 to 60 durometer. A 12 by 3-in. wheel lists at $31. A 14 by 4-in. wheel lists at $36 without the hub and clamping ring. Hub assembly in the 12-in. size adds $25 and in the 14-in. size adds $30.

If you write maker identify as IEN-13690

Valve - Rotary four way design for air or hydraulic lines to 100 pounds

Source: SPRAGUE ENGINEERING CORP.
Budlong Ave. at 135th St., Dept. IEN, Gardena, Calif.

Anodized finish

Model S-576 designates a new aluminum body lever operated rotary valve in which the lever moves between positive stops and O-rings are employed to seal against leakage and to minimize friction. Body dimensions are 2½ by 1⅝ inches. Overall dimensions, with the handle, are 3¾ by 2⅝ inches. Weight is 6 ounces. The valve carries ¼-in. tube connections and conforms to requirements of MIL-P-8564. It is suited for minus 65 to plus 100 deg. F.

If you write maker identify as IEN-13691

Control - Servo motor for instrument use, 1 and 5 watts

Source: DIEHL MFG. COMPANY
1194 Finderne Ave., Dept. IEN, Somerville, N. J.

Two-pole design

Stator and housing are molded integrally in this new two-phase instrument servo motor. The unit can be wound, when specified, with high impedance control windings for operation directly from the plates of electron tubes. The 1-watt motor can be controlled with a maximum of 3 watts since most of the power required is applied to the reference phase. Locked rotor torque is 1.5 and 5.5 inch-ounces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13692

New! Incomparable!

dyna-trol
ELECTRIC FURNACES

COMPARE THESE FEATURES

- Infinite Zone Control to 2000° and 2300°F
- Zone temperature indication by Pyrometer Selector Switch
- Porcelain Element Holders
- Automatic Hold and Cut-off instrument available
- Infinite Variety of Time-Temperature Curves Obtainable
- Rugged Construction. Highest quality insulation used.

COMPARE THESE PRICES

Firing chamber (H. W. D.)	Semi-Auto. prices	Auto. prices
6"x12"x12"	$295.	$432.
12"x12"x12"	$405.	$550.
9"x 9"x18"	$480.	$625.
14"x14"x14"	$525.	$680.
20"x20"x20"	$975.	$1140.
18"x18"x36"	$1125.	$1375.
(To 2000° Maximum Temp.)		

Over 40 Standard Models — Write for complete literature

L&L INDUSTRIAL DIVISION **MANUFACTURING CO.**
Chester 30, Pa.
Some Territories Available For Representation

If you write maker identify as IEN-13693

M&M
HOGGING MACHINES

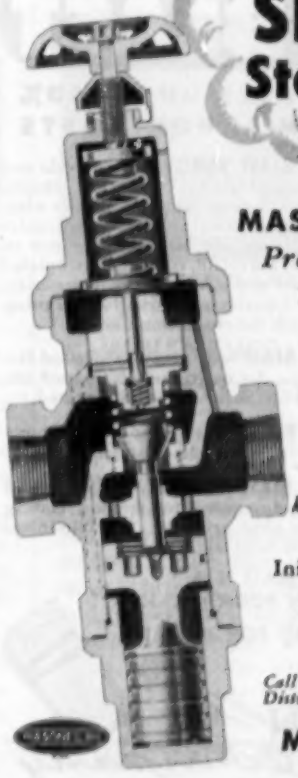
M & M machines are built in many types and sizes for hogging wood, paper, plastics, rubber, meat, bones into uniform size for easy disposal or further processing into valuable by-products. Write for illustrated specification catalog.

78

MITTS & MERRILL
1014 SOUTH WATER • SAGINAW, MICHIGAN

If you write maker identify as IEN-13694

FOR SENSITIVE Steam Control



MASONEILAN No. 11
Pressure Reducing Valve

Experience proves this is the most accurate, dependable steam reducing valve in its class. Responds instantly to smallest variations. Super-finished stainless steel vital parts prevent sticking or corrosion.

Users report maintenance consists of *little more than keeping the moving parts clean.*

All parts may be removed with valve in the line.

Initial pressures up to 250 lbs., reduce pressures 10-90 or 75 to 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1128 Adams St., Boston 24, Mass.

If you write maker identify as IEN-13695

"AMF De Walt saves us 80% on maintenance time and labor!"

says Marty Kule, Lezius-Hiles Printing Company, Cleveland, Ohio

"A typical job AMF De Walt® did for us was cutting and drilling lumber for 20 stock trucks. All the 1¼" pieces of lumber for one truck were cut and drilled in 1½ hours. Without AMF De Walt, the job used to take 8 hours. What's more, each came out accurate, alike, and required no finishing. The savings on this job alone half paid for our AMF De Walt!"

Versatile, economical, does all jobs. Fast, safe, accurate, compact. Prices start at $229 for ½ H.P. model. Send for catalog to De Walt Inc., Dept. IEN-54-12, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.
DE WALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, *New York*

If you write maker identify as IEN - 13696

MR. PRODUCTION FOREMAN:

YOU, TOO, WILL BE ASKED THIS QUESTION SOONER OR LATER, BETTER CHECK UP BEFORE IT'S TOO LATE!
WE'LL SEND YOU COMPLETE INFORMATION AND PRICES VIA RETURN AIR MAIL!
Phone, wire or write us RIGHT NOW!

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue, Saginaw, Michigan

If you write maker identify as IEN - 13697

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL JET BLAST

BENCH MODEL JET BLAST
Other sizes are available

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

SEND FOR BULLETIN

DISTRIBUTORS: A few territories are still open.

R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

If you write maker identify as IEN - 13698

WRITE for your copy of this Bulletin! for complete data on

WILLIAMS-HAGER FLANGED Silent CHECK VALVES

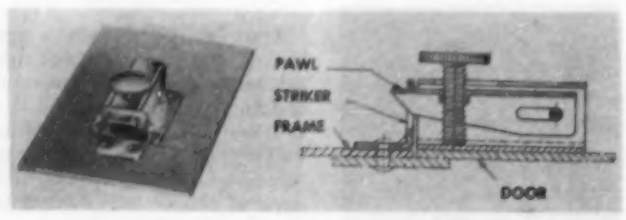
Williams-Hager check valves provide economy with silent operation in all types of piping systems installed in public buildings, utilities, waterworks, industrial plants, oil refineries, paper mills, chemical plants, hospitals and other buildings. Send for complete details contained in Bulletin 654.

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Ave., Pittsburgh 33, Pa.

If you write maker identify as IEN - 13699

Fastening - Sliding latch draws tight upon turning thumb screw

Source: SOUTH CHESTER CORP.
Dept. IEN, Lester, Pa.



Combines good appearance with modest cost

Four rivets, or screws, secure this new sliding latch to an access door or panel of either hinged or removable design. Two additional rivets or screws secure the striker to the door frame. Vibration cannot cause rattling after the thumb screw in the latch has been turned to draw the pawl up against the striker opening in tight assembly. The action also seals the door against the frame.

The design shown in the illustration is for doors where space inside is limited or where sanitary requirements forbid inside use of fastener parts. An alternate model, that installs inside the door, requires no striker since the pawl slides directly behind the door frame. Panel thickness variation is to ¼ inch maximum.

If you write maker identify as IEN - 13700

Painting - Pneumatic spray gun feeds catalyst into resin fluid spray

Source: DE VILBISS COMPANY
300 Phillips Ave., Dept. IEN, Toledo 1, Ohio

Many possibilities

Fluid plastic resin and catalyst are converged into a single spray from separate sources by this new paint spray gun. The resin is fed to the gun nozzle through the fluid line. The catalyst is introduced through the air stream. When the gun trigger is depressed, catalyst and resin meet outside of the air cap and are atomized uniformly. The gun makes it unnecessary to mix and immediately use resin and catalyst spray finishing fluids.

If you write maker identify as IEN - 13701

Glamour packaging for electric components is now possible when you employ a new prefabricated platform of polystyrene foam with recesses cut to specification to make a snug fit. The plastic also cushions and protects. Intended application is in a rigid plastic hinge box as shown in the illustration. Glo-Brite Products, 6415 N. California Ave., Dept. IEN, Chicago 45, Ill., supplies the foam platform.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13702

THE EXACT VALVE FOR SOAPY SOLUTIONS

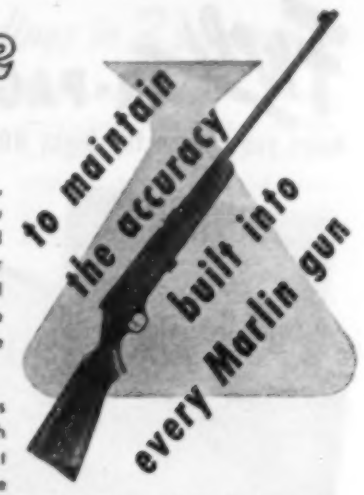
WON'T STICK OR CLOG FROM SCUM & GUM!

DeZURIK EASY-OPERATING PLUG VALVES are exactly right on all soapy, fatty lines; their rubber-faced plugs resist gum-up, close rubber-tight despite sediment, scale or solids. No binding . . . no lubrication . . . and virtually no wear! Write for data.

DeZURIK SHOWER CO. SARTELL, MINN.

If you write maker identify as IEN - 13703

Du-Lite FINISHED



The Marlin Firearms Co., "Famous for Fine Guns since 1870", has long depended on Du-Lite black oxide for an attractive finish that will be dimensionally stable throughout the life of the gun.

The Du-Lite process provides intricate precision parts with a durable, rust-resistant black oxide finish. And since Du-Lite penetrates the metal, all crevices and knurls are protected without affecting dimensions or fit.

If your target is durable, attractive, economical finishing, you'll want to know more about Du-Lite black oxide.

Whatever your cleaning or finishing problem—**Depend on Du-Lite.**

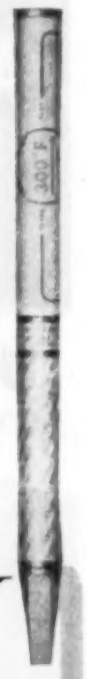
Write for complete information.

Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN 7 CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 13704

Tempilstik° FOR ALL HEAT-DEPENDENT OPERATIONS

looks like a crayon... marks like a crayon... tells temperatures like a precision instrument!



Sixty-three different compositions enable you to determine and control working temperatures from 113° to 2000° F. TEMPILSTIK° marks on workpiece "say when" by melting at stated temperatures—plus or minus 1%.

ALSO AVAILABLE IN LIQUID AND PELLET FORM . . . WRITE TECHNICAL DEPT. FOR SAMPLE TEMPIL° PELLETS . . . STATE TEMPERATURES OF INTEREST—PLEASE!

Tempil° CORPORATION
132 WEST 22ND STREET, NEW YORK 11, N. Y.

If you write maker identify as IEN - 13705

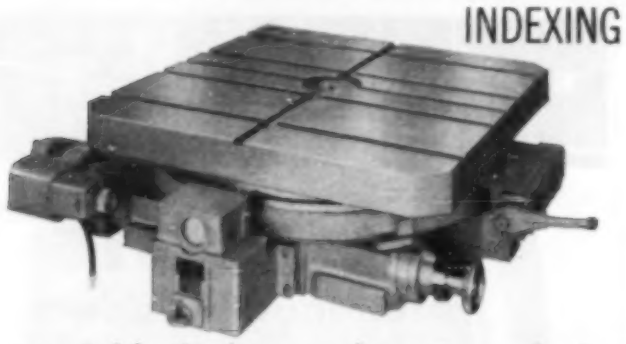
BOOTS BELLOWS • TUBES

ACUSHNET has developed rubber stocks with properties that permit sustained flexibility at unusually high or low temperatures, and high resistance to fluids, greases and gases. Our precision-molded boots, bellows and tubes give enduring protection to moving parts by excluding dirt, water, oil, etc.,—retaining grease, oil, fuel—or performing both functions at the same time over long periods of flexing.

Send For your copy of the Acushnet Rubber Data Handbook

Acushnet PROCESS COMPANY
All items are made to order
Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 13706



new table designs make set-ups faster

Gilbert's new revolving tables cut costly set-up time in boring, drilling, milling operations. *Above:* 36" square table with power rapid revolving controlled by push button, operates through worm and worm wheel. On base, with top graduated to read in ½°. Hand wheel graduated to 1 minute. Dial indicator indexing with 4 adjustable positions (additional positions can be furnished). Angular type ring clamp, single lever operated. Timken bearings on kingpin. Pressure lubrication. *Worm-feed tables:* 36", 50", 60", and 72" square or round. *Hand-indexing tables:* 36" and 50" square or round, with positive index stops.

GILBERT

THE CINCINNATI GILBERT MACHINE TOOL CO.,
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

Write for Bulletin 854A

If you write maker identify as IEN - 13707

SPECIAL WIRE CLOTH PARTS

Just to name a few . . . and most of the parts we are making to special order don't really have a name! Our real specialty is fabricated wire cloth parts, made to your specifications.

Any metal, almost any size, almost any shape . . . we can probably assemble it for you . . . faster, better and at a lower cost, than you can do it yourself.

For more information, just send for our latest Fabricated Parts Catalog.

NEWARK for ACCURACY

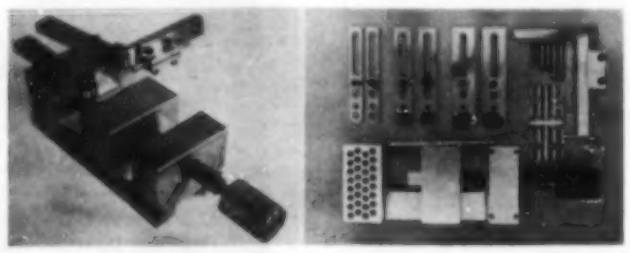
Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as IEN - 13709

Vise - With bushings and stops positions work to drill, grind, mill

Source: RYND TOOL CO.
R.D. 4, Dept. IEN, Meadville, Pa.



Minimizes layout on short runs

Precision finish, a quick acting screw to operate the movable jaw and a set of bushing holders, bushings and adjustable stops make up the assembly of this new Rynd Jig Vise. The stationary head is drilled and threaded to position the bushing holders and stop bracket so work can be set up with the aid of gage blocks and holes can be accurately positioned without need for layout on short runs.

The vise can be employed also on tables of grinding machines and milling machines for quick set up and work release. Construction is in steel, hardened and ground, to mount jaws measuring 1¾ in. in height by 3 in. in width. The quick release screw provides maximum 4-in. jaw opening.

Equipment includes an adjustable stop rod assembly, a precision hardened and ground V-block, two pair of bushing bars, three pair of precision bushings measuring ⅛, $\frac{5}{16}$ and $\frac{7}{16}$ in., three pair of precision dowels, screws, washers and wrenches.

If you write maker identify as IEN - 13710

Building - Thermoplastic skylight to admit light through a flat roof

Source: ARCHITECTURAL PLASTICS INC.
20 Fitch St., Dept. IEN, East Norwalk, Conn.

Bulletin, "AP Wide Angle Acrylic Dome Skylight"

Transparent dome, made of thermoplastic acrylic resin, and a sheet copper evaporation trough make up the assembly of this new AP skylight. The unit sets into the roofing material. It can be handled without difficulty by a roofer since the dome itself is self-flashing and conflicting responsibilities in trades are avoided.

The dome and trough are positioned and attached by screws. The roofing material is then spread over the flange to complete the job. Attachment devices, screws, expansion bolts, bushings and washers are supplied to suit conditions of the installation.

The skylight is available in sizes to fit standard roof joist spacings and roof openings. Last step in the installation is to peel off the protective coating that is supplied by the manufacturer. This operation is shown in progress to the right.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13711

BY USING

JONES TACHOMETERS

How can you get the most from your machinery without sacrificing the quality of your product? A Jones TACHOMETER will give you the answer in RPM's, FPM's, etc. Jones TACHOMETERS are used widely in every type of industry to check and maintain best performance of operating equipment. Both Portable (as illustrated) and permanently installed types are available at surprisingly moderate cost.

• WRITE FOR BULLETIN 146-2 •

JONES MOTROLA CORP.
Stamford, Conn.

If you write maker identify as IEN - 13712

2000...6000 PSI HYDRAULIC PRESSURE

From Your Shop Air Line

With this WATSON-STILLMAN Double Acting Air Engine Pump

A compact, lightweight hydraulic pump for many applications:

- For Hydrostatic testing
- As a pumping unit for all types of hydraulic service
- To operate hydraulic jacks or machinery
- To fit your special hydraulic applications

Simply connect the pump to your shop air line or field compressor. Operates on pressures from 50 to 150 psi.

Write today for Bulletin A-5

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

If you write maker identify as IEN - 13713

USE PROPANE? USE ACETYLENE?

USE THIS TORCH-O-MATIC USE THIS TORCH-O-MATIC

WHICHEVER TORCH-O-MATIC YOU USE—EXCLUSIVE TRIGGER-CONTROL SAVES YOU TIME, SAVES YOU FUEL

With either the Propane or Acetylene Torch-o-matic, you get the *exclusive* trigger-control feature that *eliminates* lighting-up, adjusting, and open-flame hazards. Just pull the trigger and it lights; release the trigger, it's out! With the Propane Torch, pulling the trigger completely back lengthens the flame from a pin-point to a full 6 inches. This *automatic* on-off flame control saves you time when you're using Torch-o-matic; saves you gas when you're not! Write for complete details.

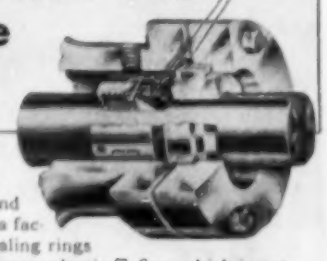
VELOCITY POWER TOOL COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.

If you write maker identify as IEN - 13714

NEW JOHN CRANE with

mechanical seal TEFLON*

Solves Corrosion and Temperature Problems...



With the new Type 9 John Crane Mechanical Seal, proper sealing of chemicals and corrosive liquids is no longer a factor. Its flexible wedge and sealing rings are molded of the remarkable new plastic Teflon, which is not affected by any industrial chemical.

The successful development of two years research and field testing, this revolutionary seal handles corrosive liquids never before controlled effectively by conventional, flexible type mechanical seals. Thus, John Crane designing experience is effectively combined with the unique properties of Teflon: chemical inertness, extremely low friction and high heat resistance. Type 9 Seal can be employed at temperatures up to 500°F.

SEND FOR BOOKLET: *containing full details on the Type 9 Seal.*

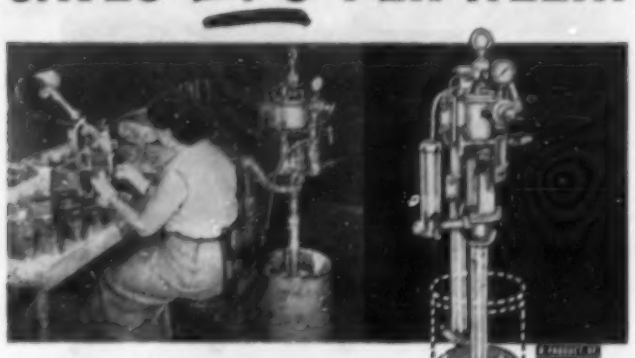
Crane Packing Co., 1815 Cuyler Ave.
Chicago 13, Ill.
In Canada: *Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.*

*DuPont's trademark

JOHN CRANE **CRANE PACKING COMPANY**

If you write maker identify as IEN - 13715

ONE VERSATAL PUMP SAVES $270 PER WEEK!



PUMPS sealing compound direct from original container

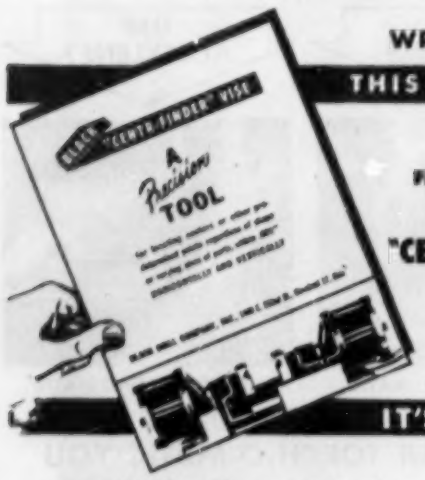
Not only does this Alemite Versatal application save $270 per week in materials—but it also makes possible a 500% increase in operator efficiency!

Air-operated Versatal Pumps apply material faster, easier, at less cost . . . give positive, uniform delivery through long lines—safely and without waste.

FREE Send now for idea book. How Alemite Versatal Equipment can speed, simplify your handling problems. Write Alemite, Dept. B-124, 1830 Diversey Pkwy., Chicago 14, Illinois

ALEMITE Versatal

If you write maker identify as IEN - 13716



WRITE FOR THIS BOOKLET

FEATURING THE BLACK "CENTR-FINDER" VISE

IT'S FREE

Filled with practical information on this precision tool that locates centers within .001" vertically and horizontally—locates pre-determined points regardless of shape or varying sizes of parts. Tells how it operates—illustrates the vise in use on drilling and boring operations on non-symmetrical work. The facts in this booklet will show you how to cut costs on drilling, chamfering, hollow milling, deburring, reaming, tube flaring, and many other production operations.

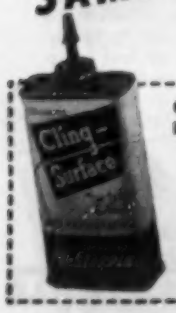
Write today for your copy.

THE BLACK DRILL COMPANY, INC.
1378 East 222nd Street • Cleveland 17, Ohio

If you write maker identify as IEN - 13717

FREE SAMPLE

- Makes and keeps belts soft and pliable
- Pliable belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- Only belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896



CLING-SURFACE CO., 1044 Niagara St., Buffalo, N. Y.
In Canada: Write CLING-SURFACE CO., Toronto 2, Ont.

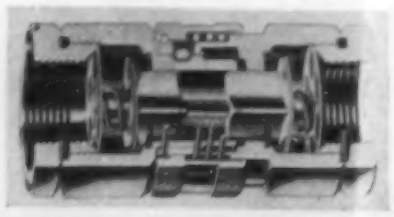
Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name .....
Title .....
Company .....
City ..... State .....

If you write maker identify as IEN - 13718

Hose Fitting - Valve coupling closes on quick line disconnection

Source: SNAP-TITE INCORPORATED
201 Titusville Road, Dept. IEN, Union City, Pa.



Made of alloy steel

Wing type valves in two halves of this new Series-H coupling seat on O-ring washers when the coupling is in disconnected position to prevent leakage in either direction from a pipe or hose line. Both valves are unseated and ride against metal-to-metal stops, when the coupling is connected, to prevent compression of the valve washer ring in the presence of surge or pressure build-up in the line.

The valves are backed by a new type of barrel spring riding on a perforated spider which acts both as a valve stop and guide to hold the valves steady in open position in the presence of either steady or pulsating flow. The coupling halves are sealed and are locked by means of balls and a spring backed ring. Threaded end bushings, with O-ring seals, complete the assembly. Sizes range from ⅛ to 10 in. in inside diameter.

If you write maker identify as IEN - 13719

Corrosion Proofing - Teflon tape with self-adhering silicone adhesive

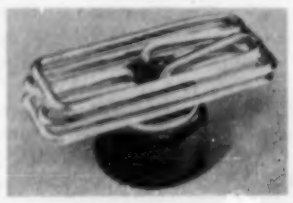
Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Strips off clean

Number 549 is a new semi-transparent colored tape for application on surfaces that require protection against corrosion and chemical attack. The tape is made of a 5-mil teflon film and 1 mil of silicone adhesive. It has tensile strength of 15 lb. per inch of width and elongation of 300 per cent. It is unaffected by temperature change in a range between minus 65 and plus 350 deg. F. Width is ½ to 5 inches. The tape is in 36-yd. rolls.

If you write maker identify as IEN - 13720

Three phase electric heating element, known as Chromalox Type TTUH, has been developed by Edwin L. Wiegand Company, 7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa. The element is intended primarily for built-in application in coffee urns, with capacities from 1 to 20 gal., and in steam tables and other containers with minimum water depth of 2½ inches. It applies in an opening measuring $2\frac{7}{16}$ in. in diameter in the bottom of the vessel where it is fitted over a gasket and washer. Capacities are 1,000 to 6,000 watts for operation on 110 or 220 volts.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13721

JACO Horizontal

STOCK REEL

LOW COST — AUTOMATIC
No motors — No belts — No sprockets

POWERED BY THE NATURAL SPRING OF UNCOILING STOCK . . .

JACO Stock Reel operates automatically . . . without attention or maintenance . . . so simple there is nothing to get out of order.

The loop of stock between the Coil and the Press Feed completely eliminates slippage, kick-back and over-run.

JACO Stock Reels handle all types of resilient coiled stock for light stampings up to 250 lb. coil weight . . . up to 36" coil diameter . . . up to 6" stock width.

Proved in actual use by major manufacturers. Guaranteed to work on your job or money back.

Write today for full details
Hingham 6-0873

JACO DEVICES, INC.
91 HIGH STREET, HINGHAM, MASS.

If you write maker identify as IEN - 13722

EFFICIENCY *Climbs...* WITH

ALCO-LITE
Aluminum Ladders

The exceptional light weight and great strength of ALCO-LITE aluminum ladders gives a *lift* to the efficiency of the men who use them. ALCO-LITE ladders are the easiest to handle, to carry, to store . . . and their patented heavy-duty design makes them the safest of all ladders.

ALCO-LITE ladders of every type and size serve the needs of plant, warehouse and office. Write us about your ladder requirements today.

TYPE DLL EXTENSION LADDER
The lightest of ALCO-LITE extension ladders, weighing slightly more than 1 lb. per foot. Rigid channel construction with permanently mounted corrugated rungs. Extended sizes up to 21 ft.

MEMBER: METAL LADDERS ASSOCIATION

ALCO-LITE ALUMINUM LADDERS
ALUMINUM LADDER COMPANY
100 CARBIS STREET • WORTHINGTON, PENNA.

If you write maker identify as IEN - 13723

Here's How

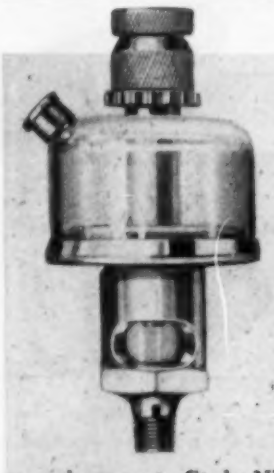
GITS

Provides

Low-Cost Replacement Of YOUR Lubricating Devices

OIL HOLE COVERS

This model is designed to fit into a simple drilled hole. Ideal for use on small motors, generators, starters and light machinery—for dependable oil hole protection at moderate cost. Larger sizes frequently used as filler caps on tanks or reservoirs. Style R—No. 305.



SIGHT GRAVITY FEED OILERS

Rate of oil flow regulated by needle valve, directly observed through sight glass in stem. Shut-off knob does not affect needle valve adjustment. Visible oil supply. Non-breakable. Tops in convenience and dependability, at low cost. Style NFU—No. 3602-A.

Too much machine "down-time"? Too much time wasted in servicing your machinery? Perhaps some old, worn lubricating devices need replacement. Maybe a different, more modern device will do the job more efficiently. Whenever you replace, specify GITS Lubricating Devices—the widest selection available anywhere, right in stock. The items pictured above are only a few of our many thousands of lubricating devices. Send NOW for your free Catalog.

GITS BROS. MFG. CO.
The Standard For Industry For Almost Half A Century
1854 South Kilbourn Avenue
Chicago 23, Illinois

If you write maker identify as IEN-13725

Whatever Your Application...

. . . Sarkes Tarzian Centre-Kooled Selenium Rectifiers give years of trouble-free, maintenance-free service. Write for complete information.

Sarkes Tarzian, Inc., Rectifier Division
DEPT. B-6, 415 N. COLLEGE AVE., BLOOMINGTON, IND.
In Canada: 700 Weston Rd., Toronto 9, Tel. Murray 7535
Export: Ad. Auriema, Inc., New York City

Sarkes Tarzian "Centre-Kooled" SELENIUM RECTIFIERS

If you write maker identify as IEN-13726

A NEW CONCEPT FOR EASIER DRILLING

WITH **Milwaukee** HEAVY-DUTY 1/4" MODEL B

With PALM-PUSH Grip *

Puts The PUSH Where It Belongs . . . In DIRECT LINE With The Drill Chuck

Study the photo above and you'll quickly see what we mean. Here's a drill that's all new . . . New in idea, new in design, new in power and brings new ease to power drilling.

In-Line design provides a straight line push from the elbow through to the twist drill. Result . . . less wrist fatigue, truer holes, fewer broken twist drills and no blisters from switch trigger.

MOST POWERFUL DRILL OF ITS SIZE ON THE MARKET
Made of the best material and Fully Guaranteed. It's powered by an entirely new motor that develops more than 1/5 horsepower. All ball and roller bearings lifetime lubricated.

Truly a top quality heavy duty production drill. We do not make home workshop drills . . . but design and build MILWAUKEE tools specifically for the man who must depend on good tools to make his living.

AVAILABLE IN 6 MODELS . . . 3 CHUCK SIZES
Speed ranges 380 to 5000 rpm . . . chuck capacity sizes 1/4", 5/16" and 3/8". Also available with Jacobs Keyless Impact Chuck.

See it in Action

To fully appreciate performance and feel of this new *In-Line* holeshooter, you must see it in action. Just write us and a trained representative will give you an actual drilling demonstration. No obligation on your part.

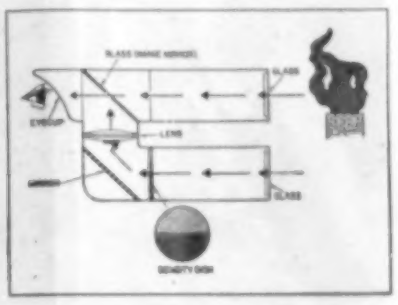
Write for free folder D-10

MILWAUKEE ELECTRIC TOOL CORP.
5340 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

If you write maker identify as IEN-13728

Gage - Optical instrument compares smoke with a density disc

Source: MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.



Aids in compliance with smoke control laws

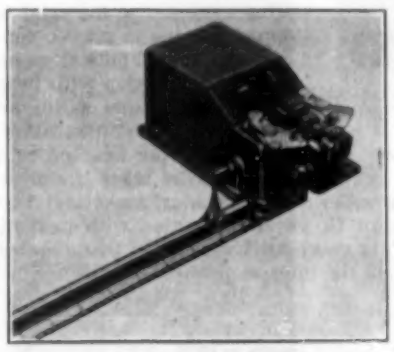
MSA Smokescope is a new optical instrument which an operator aims at smoke issuing from a chimney and observes this smoke through an eye cup. Light from the smoke area is transmitted through one tube of the instrument and through a density disc inside the tube to a front surface mirror. It is reflected by the mirror to pass through a lens to an image mirror where it can be compared directly with the smoke screen through the upper tube of the instrument.

There is no possibility of interference from ambient light because the user views the smoke through apertures which limit the field of vision to the subject. There is no need to shift the eye from the smoke to a separate chart since the chart, in the form of the density disc, appears against the smoke being viewed. Interference is prevented, in transmission through the lens, by blocking the central portion of the lens on its bottom surface with an opaque disc.

If you write maker identify as IEN-13729

Stripping - Pneumatic machine cuts insulated wire, strips both ends

Source: TECHNICAL DEVICES INC.
2350 Centinela Ave., Dept. IEN, Los Angeles 64, Calif.



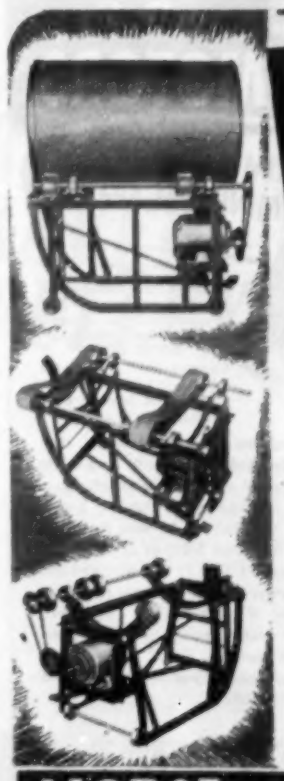
Mounts on bench

The operator of this new Mark I machine pulls an insulated wire through the head of the machine to a predetermined length. Then he depresses a foot pedal. This action admits air pressure to operate a knife that cuts the wire. Stripper blades remove insulation from the wire on both sides of the cut. The operator can turn out 2,000 cut and stripped wires per hour. List price is $249 with one set of cutters and strippers for 18-gage wire and the foot pedal control including the air hoses and a bench stop.

The cutting knife and the strippers are assembled as a unit, known as a cartridge, for interchangeable application in the machine. The cartridge units are available for any solid or stranded wire measuring 14 through 24 gage, insulated with plastic, asbestos, nylon, teflon, or braided glass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13730



THE NEW "200" MORSE PORTABLE ROTATOR

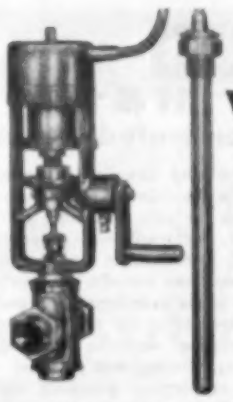
CAN BE ADAPTED TO MOST ROTATING JOBS!

The ROTATOR can easily be moved from one job to another or steered into close quarters. It is available for tumbling fibre drums as well as steel drums from 1 to 55 gallons. Designed by Morse, the ROTATOR has many practical uses and has been found to pay for its low cost many times over. This Portable ROTATOR meets today's ever-present need to save time and labor.

Write for additional information.

MORSE *MANUFACTURING CO.* INC.
755 West Manlius St. East Syracuse, N. Y.

If you write maker identify as IEN-13731



Where you can do a BETTER job with SYLPHON 923-Q temperature regulator

● Wherever you need quick changes in temperature of liquids and gases, here's the regulator that does it. A simple turn of the crank is all that's needed.

Applications include control of temperature in both open and closed tanks. It is used for bottle washers, kettles, glue pots, slashers, washers, sterilizers.

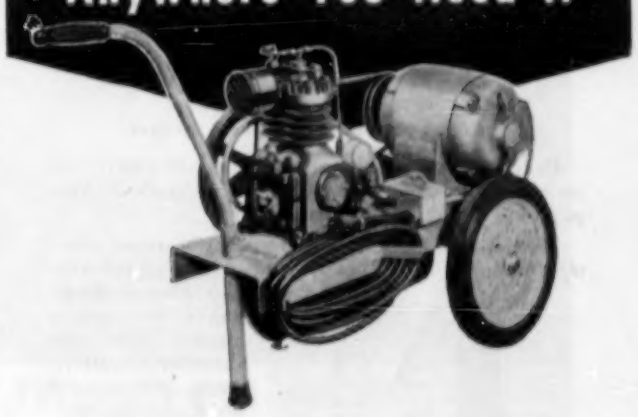
The simple, accurate, powerful bellows thermostat mechanism will give years of service.

For complete information on this and hundreds of other bellows-type controls write for catalog XN-D.

Robertshaw-Fulton
CONTROLS COMPANY
FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN-13732

Have Compressed Air Anywhere You Need It



New DeVilbiss Portable Air Compressors bring air to the job for spray painting, air tools, emergency service, or on-the-spot air supply. Available in ½ or 1 hp class, gas and electric models. Delivered pressure 60 or 100 pounds. Can even be carried in the trunk of your car. Write today for full details.

DEVILBISS THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as IEN-13733

New Interchangeable Gas-Electric Power Unit Gives Big Advantages

READY-POWER INTRODUCES MODEL HA-3

Only Ready-Power gives you *interchangeable* gas-electric power for electric trucks. New Model HA-3 offers important advantages for easier installation . . . quicker adjustments . . . simpler preventive maintenance. Complete range of models for all trucks. Write for information.

READY-POWER
The READY-POWER Co., 3830 GRAND RIVER AVE., DETROIT 8, MICH.
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 13734

Famous Holes

H & K Perforated Holes

Years and years ago, Santa made the chimney hole famous—tho for only one night each year. For more than 70 years H & K Perforated Holes have spread their benefits thru every day of the year for savings and greater efficiency in industrial processing requiring cleaning, sizing, filtering and straining—for ventilating, guarding and decorating — for the escape of sound, light and air and thousands of other uses.

We have, thru these many years, built tools with which to perforate practically any pattern you may require — in any of the metals, plastics, plywood or other materials available in coil, sheet or plate form.

From stock, we offer you many patterns of round holes and slots in steel, tinplate and brass—and ornamental patterns in steel.

Remember —
"If it can be perforated H & K can perforate it!"

The Harrington & King Perforating Co.

Ask for catalog No. 62 for complete information

5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as IEN - 13735

. . a telephone booth that

Cuts outside noise 50%

the Hear Here
ACOUSTI-BOOTH
$100

Try it! . . you risk only shipping charges

Order an Acousti-Booth today . . if you're not completely satisfied, return it for a *full refund.* You pay only the shipping charges.

The walls of thick, sound absorbing material make telephoning like talking from a private office. And this Acousti-Booth takes less room than a large wall calendar. Attractive gray, hammered finish steel exterior.

$100 F.O.B. Chicago, Model 45. If you want light fixture, add $9.

Ask for Bulletin A-131

ACOUSTI-BOOTHS
Burgess-Manning Company, Architectural Products Div.
5970 Northwest Highway, Chicago 31, Ill.

If you write maker identify as IEN - 13736

Cordley NEW YORK

The Best Buy In Water Coolers

Don't take our word for it . . . let the Cordley warranty speak for itself. It guarantees the extra protection that only a superior product could afford. Here are the reasons why the Cordley warranty is the best—

1. **Its coverage is broad—covers replacement of the entire cooler.**
2. **It has longevity—up to 5 years from the date of installation.**
3. **It has depth—includes additional electrical parts replaceable at the point of use.**

Whether your manufacturing is light, heavy, or hot-heavy, Cordley can serve your needs with its complete line of bubbler or bottle type electric coolers.

A folder of our different models, a sample warranty, and the name of your nearest distributor are yours for the asking. Simply fill out the coupon below.

1211

Cordley & Hayes,
443 Fourth Avenue, New York 16, N. Y.

Please send me your folder C-6 and sample warranty.

Name_____ Title_____

Company_____

Street_____

Town_____ Zone_____ State_____

If you write maker identify as IEN - 13737

Conveying - Rubber cleated belt carries merchandise up steep incline

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., Dept. IEN, New York 20, N. Y.

U. S. Steep Grade package conveyor belt

Tough, springy rubber cleats, covered with tiny grippers, are arranged in staggered rows, spread apart as shown in the illustration, on the surface of this new rubber fabric conveyor belt. Molded construction anchors the cleats to the belt carcass and prevents them from being torn loose by heavy cases. One square foot of belt surface contains about 960 cleats, each ½ in. in length by ⅛ in. in width and height. Cases, cartons, packages can be carried up inclines as steep as 45 deg. without sliding back. The belt is available in widths to 48 inches.

If you write maker identify as IEN - 13738

Conductor - Heat transfer cement spreads heat or cold over a surface

Source: CHEMAX MFG. CORPORATION
900 Wilmington Road, Dept. IEN, New Castle, Del.

Handles like mortar

Tracit trade names a new plastic thermal conducting cement that can be applied over an irregular surface to air-harden in about 48 hours. It can be heated to promote the setting action. The material is shipped in cans in plastic condition ready for application by trowel in connection with heat or cold tracing lines as in the valve shown in the illustration.

It spreads the heat or cold carried by the trace line over the valve surface as an alternate to regular jacketing. The material is suited also for floors in connection with radiant heating. It can be used to make intricate molds that require fast heat conduction from the interior to the mold surface.

If you write maker identify as IEN - 13739

Grinding segments, similar to those used on Blanchard machines, can be reclaimed in your own plant by employing a new adhesive offered by Chemical Development Corp., Endicott St., Dept. IEN, Danvers, Mass. Known as Gaff Bond 334, the adhesive is applied to the surface of the stones. The segments are clamped together for 48 hours and then are returned to service in the grinding machine. The cemented joint does not interfere with the grinding operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13740

GLOBE A.C. or D.C. MOTO-MITE* MOTORS

. . . for MAXIMUM POWER in MINIMUM SPACE!

D.C. MOTO-MITE* Shown actual size. Length 1¾" Diameter 1 3/16" Weight 3.5 oz. Larger, smaller sizes available. A.C. MOTO-MITE* Length 2¼" Diameter 1¼" Weight 6 oz. Larger and smaller sizes available.

*Trademark

Miniature, compact, powerful, custom-built and quality controlled motors, characterized by high output and high efficiency. Designed as components for precision airborne accessory equipment, Globe Motors meet all military requirements. Speed governors, gear reducers, radio noise filters, electromagnetic clutches, brakes, etc., are available as standard assemblies. D. C. Motors can be made for various voltage applications ranging from 6 to 100V, and from 5,000 to 22,000 R.P.M. and with power output up to 1/100 H.P., and up to 1/50 H.P. dependent on frame size. A.C. Motors, 400 C.P.S. Hysteresis-Synchronous type, can be made for voltage applications up to 115V. with power output up to 1/200 H.P. for 4-pole types, and up to 1/100 H.P. for 2-pole types. Single phase capacitor-run or two phase windings available. A.C. Motors, 60 C.P.S. also available.

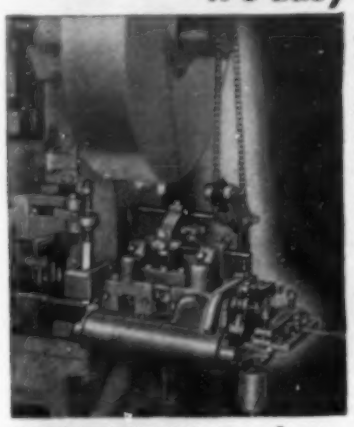
Let Globe's complete engineering facilities investigate and resolve your motor problems. WRITE FOR COMPLETE INFORMATION TODAY!

Globe industries, inc.
MOTORS • GEAR REDUCERS • GENERATORS • GOVERNORS • SERVOS
BLOWERS • FANS • ACTUATORS • SWITCHES • GYROS • VIBRATORS
1788 STANLEY AVE., DAYTON 4, OHIO

If you write maker identify as IEN - 13741

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 13742

YOU CAN HEAT *ANYTHING*

FROM A NEEDLE . . . TO A TURBINE SHAFT
FASTER AND BETTER
WITH *LepeL*-

HIGH FREQUENCY *Induction* HEATING UNITS

- BRAZING
- HARDENING
- SOLDERING
- ANNEALING
- MELTING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of electrical and metallurgical experience, the name Lepel has become the symbol for quality in induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

If you are interested in the application of induction heating you are invited to send samples of the work with specifications of the operations to be performed. Our engineers will process these samples and return the completed job with full data and recommendations without any cost or obligation.

LEPEL Electronic Tube GENERATORS
1 KW; 2½ KW; 5 KW; 10 KW; 20 KW; 30 KW; 50 KW; 75 KW; 100 KW.

LEPEL Spark Gap Converters
2 KW; 4 KW; 7½ KW; 15 KW; 30 KW.

WRITE FOR THE NEW LEPEL CATALOG . . . . . .
36 illustrated pages packed with valuable information on high frequency induction heating.

All Lepel equipment is certified to comply with the requirements of the Federal Communications Commission.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN - 13744

Cut out needless re-roping costs

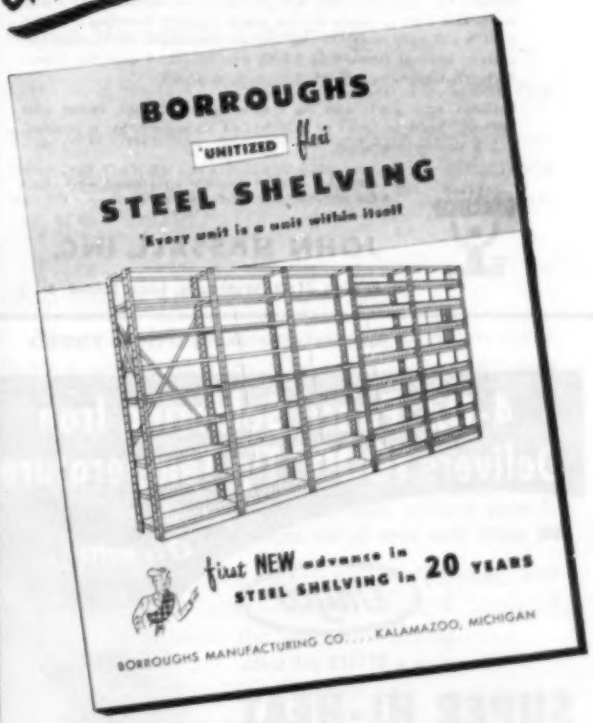
USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 13745

Don't Buy STEEL SHELVING *until* you get this catalog



it's just off the press!

Read about the most original, practical and economical steel shelving on the market.. the last word in new features, simplicity and value. We could tell you more, but why not get the complete story from our new catalog? BORROUGHS UNITIZED FLEXI STEEL SHELVING has been on the market but a few months, and already it's an outstanding success. So don't buy any steel shelving until you read about Borroughs—the most advanced steel shelving in 20 years!

BORROUGHS MANUFACTURING COMPANY
A Subsidiary of American Metal Products Company of Detroit
3002 NORTH BURDICK **amp** KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 13747

Furniture - Portable steel bench fits into changing production lines

Source: ANGLE STEEL INC.
452 Thomas St., Dept. IEN, Plainwell, Mich.

For utility use

Three lengths are 4, 5 and 6 ft. for this new portable bench. Width is 30 in. and height is 34 inches. The assembly is available with wood, steel, or Masonite on a steel top. Retractable handles, at one end, permit lifting that end so the bench rides on its rigid caster wheels under the opposite end. The wheels measure 4 in. in diameter and are made of steel. The bench is finished in olive green baked enamel.

If you write maker identify as IEN - 13748

Strapping - Motor driven reel to dispense steel strap from a coil

Source: A. J. GERRARD & COMPANY
1950 N. Hawthorne Av., Dept. IEN, Melrose Park, Ill.

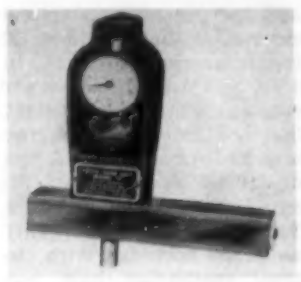
For heavy duty

Model 430 Bulkbinder is a new motor driven reel to handle strapping measuring ¾ to 2 in. in width by 0.035 to 0.050 in. in thickness. The operator controls unreeling and cutting to predetermined length. The reel is operated by connection to a 110-volt ac. circuit.

If you write maker identify as IEN - 13749

Gage - Checks depth dimension, made up of standard stock components

Source: A. G. DAVIS GAGE & ENG. CO.
21435 Dequindre Road, Dept. IEN, Hazel Park, Mich.



Catalog 8

The housing, the indicator, the bar attachment and the gage pin have all been standardized in the company's Model-V line of indicator type depth gages. It is possible to select a complete assembly for practically any work piece condition. Interchangeable bars and gage pins are carried in stock. Any specified make of indicator can be supplied. The company has prepared information to assist in selection.

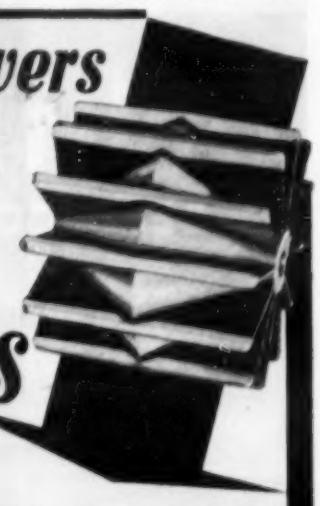
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13750

Super-Savers

SPROUT-WALDRON

BELT-SAVER PULLEYS



You'll cut belt costs when handling rough, abrasive materials with Belt-Savers. Exclusive cone and wing design prevents materials from lodging between pulley and belt, increasing belt life from 50% to 400%.

You'll also get top economy and complete satisfaction with other Sprout-Waldron cast-iron pulleys that are available in many sizes and types for conveyor and transmission use.

Write for free booklets!

364

SPROUT-WALDRON
5 LOGAN STREET • MUNCY, PA.
PELLET MILLS · HAMMER ROLLER ATTRITION AND BURR STONE MILLS · MIXERS · SCREW BELT AND PNEUMATIC CONVEYORS · BUCKET ELEVATORS · CUTTERS CRUSHERS AND FEEDERS · REELS · SEPARATORS AND ASPIRATORS

If you write maker identify as IEN - 13751

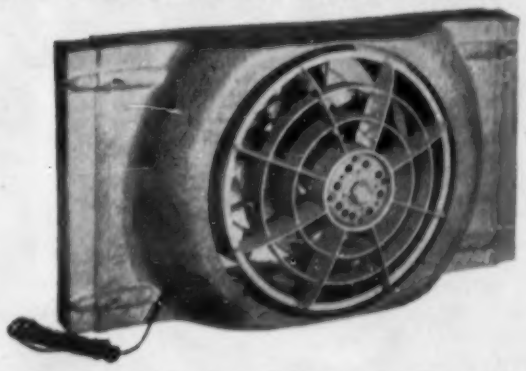
MERRILL *MATERIALS HANDLING* DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 13752

FROM ROUGH PRE-FORM...

TO FINISHED FAN HOUSING...



3 EASY STEPS WITH REINFORCED PLASTICS

1. **Rough pre-form of glass fibers and binder is first oven-cured and dried.**
2. **It's then placed in the mold and saturated with BAKELITE Polyester Resin "syrup."**
3. **Two to three minutes moderate heat and pressure completes the window-fan housing of reinforced plastic!**

The finished housing, only 1/10 in. thick, resists chipping, denting, and cracking. It stands up under vibration. Oil, grease, and aging won't harm it. During assembly, it can be bored, cut, or tapped with carbide or diamond tipped wood and metal fabricating tools.

No need to paint . . . the natural resin color and glass fiber pattern give a handsome translucent effect with lots of eye-appeal. Its smooth, bright surface is easy to clean.

For your next job, use reinforced plastics made with BAKELITE Polyester, Phenolic, Epoxy, or Epoxy-Phenolic Resins. You'll get low-cost tooling, production economies, and a product loaded with "sell." For information, write to Dept. ZS-14.

Fan Case molded by **Molded Fiberglass Co.,** Ashtabula, Ohio, for **LeJohn Manufacturing Co.,** Huntington, West Va.

BAKELITE
TRADE-MARK
Polyester, Phenolic, & Epoxy Resins For Reinforced Plastics

TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company Division of Union Carbide Canada Ltd. Belleville, Ontario

If you write maker identify as IEN-13754

Bake varnishes safely with DESPATCH OVENS

Portable Electric Tools, Inc., Chicago, uses six Despatch V-39 ovens and three Despatch RS-1 ovens to bake thousands of electric motor armatures and field coils every day.

The highly volatile gases released by varnishes baking at near 300° temperatures are carried off by the Despatch-designed exhaust system.

The forced exhaust is electrically timed to assure adequate ventilation at peak vapor periods—gravity exhaust carries on in the later stages of baking. Dual thermostatic systems guarantee accurate heat control.

Portable Electric Tools found that the racks designed for the truck loaded V-39 ovens could be conveniently used in the Batch type RS-1 oven—this fact, plus the high efficiency of the units resulted in a 50% production increase after installing the Despatch system.

Send for Bulletin 100

DESPATCH

DESPATCH OVEN COMPANY
337 Despatch Bldg. • Minneapolis 14, Minn.

If you write maker identify as IEN-13755

FIRST TIME

An electric truck made expressly for the production floor

MODEL EL4F Cap. 4,000 lbs. Patent No. 2,564,002

RAYMOND LOW-LIFT

PLATFORM ELECTRIC TRUCK

SAVE SPACE, SPEED WORK on your production floor with the RAYMOND Low-Lift Platform Truck. This compact truck actually operates in 5-ft. hand truck aisles . . . positions work-in-process right at machines.

RAYMOND LOW-LIFT lets you store stock in central location . . . serve 2 to 4 production areas with one man and one truck. Result: you save manpower, speed up the flow of materials, free floor space for more men and machines. RAYMOND Low-Lift travels up to 5½ mph loaded, up to 6 mph empty.

USE THIS TRUCK in the warehouse and on the shipping dock too . . . it maneuvers with ease inside boxcars, truck trailers. The Low-Lift's light weight permits safe use on low-capacity elevators and floors. Truck is equipped with new RAYMOND power unit that opens up like a book for fast, easy servicing. Exclusive load wheels provide more bearing surface, less wear on floor, easier pallet entry.

The RAYMOND CORPORATION
3534 Madison St., Greene, N.Y.

( ) Please send latest Bulletin on Low-Lift Platform Electric Truck.

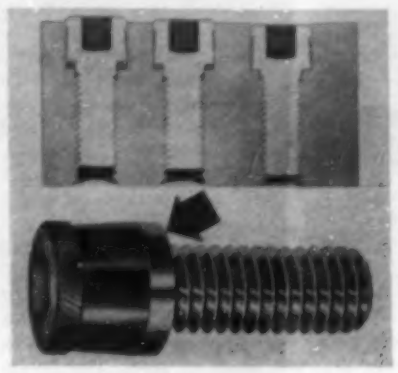
( ) Please have RAYMOND representative call.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN-13757

Fastening - Socket head screw with lead sealing washer under head

Source: SAFETY SOCKET SCREW CO.
6501 Avondale Ave., Dept. IEN, Chicago 31, Ill.



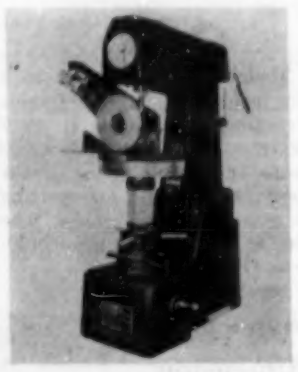
Patent applied for

Sizes start at 3/16 in. for this new Led-Lok cap screw. The screw is made with a tapered chamfered shoulder beneath which a lead washer is assembled. The washer locks and seals the head when the screw is tightened into place in a counterbored hole. The screw can be removed and returned to its original position without loss of locking and sealing ability. The lead also cushions the thread tightening action to protect threads in aluminum and brass.

If you write maker identify as IEN-13758

Testing - Rockwell machine and fixture read gear tooth hardness

Source: AMERICAN CHAIN & CABLE CO.
929 Connecticut Ave., Dept. IEN, Bridgeport 2, Conn.



Special assembly

Illustrated is new set-up of the company's Superficial hardness tester and a special goose-neck type Brale in connection with a fixture that positions a gear to check tooth hardness at the pitch line.

The gear is placed on an inclined plane mounted on a sliding plate that is movable toward a positioning anvil. An elevating screw is rotated in upward direction to bring the Brale into contact with the gear tooth. At this point, the set-up is locked and the test cycle is performed to obtain a reading.

If you write maker identify as IEN-13759

New line of rectangular "cans", for use as high voltage shields, transformer cases, condenser housings, includes 25 sizes measuring 2⅛ by 1¾ in. to 7½ by 7½ in. in section and from 2 to 9 in. in body height. The new units are manufactured by George D. Ellis & Son, Inc., 4040 N. American St., Dept. IEN, Philadelphia 40, Pa. They can be specified in various access openings, with closures, ventilating hole patterns, fastening fixtures and in specified metals and finishes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13760

UNITABLE®

BELT CONVEYOR

For Assembly - Inspection - Packaging

Most versatile slider-bed belt conveyor you can find. 10′ to 80′ lengths. Integrated Power-Pac drive saves money in initial cost, upkeep and performance.

CONVEYOR SPECIALTY COMPANY INC.
35 Newport Avenue
North Quincy 71, Mass.

If you write maker identify as IEN-13761

FROM *Turbo-Props* TO *Atomic Subs*

Precision

Unbreakable PISTON and SEALING RINGS Solve Problems as Advanced as Today's Engineering.

Your ring problems may not be as demanding as mentioned above . . . but here is piston and sealing ring know-how that can meet your most rugged requirements. PRECISION Unbreakable Rings are made from a variety of Super Alloys . . . Bronze, Stainless Steels, Stellite and others.

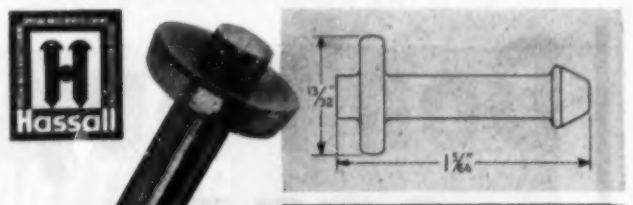
Whether your problems are turbo-prop engines, harnessing atomic power or more simple applications, PRECISION Piston Rings can help you.

Write for our new bulletin.

PRECISION PISTON RINGS, INC.
of Indianapolis
1420 Commerce Avenue · Indianapolis 1, Indiana

If you write maker identify as IEN-13762

Hassall



SCREW MACHINE	$14.00 per thousand
COLD HEADED	$5.20 per thousand
SAVING	$8.80 per thousand

This cost:

How about your fasteners or small parts? Have you had an estimate from HASSALL?

This is a typical example of how HASSALL saves thousands of dollars for cost-conscious manufacturers in hundreds of industries. This part is made in one piece by cold heading . . . the part is not only lower in cost but also stronger and just as accurate. Savings amount to $8.80 per thousand and this manufacturer used hundreds of thousands a year!

Perhaps your parts can be made by this better, lower cost method. Send samples or sketches of your parts for a prompt, $ $ $ saving quotation.

HASSALL SERVICE

• Send for 3 color decimal equivalent wall chart.
• On request, our 36-page catalog.

JOHN HASSALL, INC.
P. O. Box 2169, Westbury, Long Island, N. Y.

If you write maker identify as IEN-13763

4-OZ. Pencil Soldering Iron Delivers 1000° Tip Temperature

NOW, *more than ever before . . .* — *yet only 47½ watts . . .*

Ungar

does a BETTER *job with*

SUPER HI-HEAT SOLDERING TIPS

For production line soldering and extra heavy duty service!

Here in this famed, featherlight, pencil-slim tool is everything you expect from big 100-150 watt irons—except the excess weight, cumbersome bulk and maintenance chores which result in slow-down fatigue and increased costs. Thread a SUPER HI-HEAT TIP into the famed UNGAR HANDLE for a searing 850 to 1000 degrees of tip temperature and discover an ease of handling, speed and efficiency never before possible. 4 interchangeable tips only 47½ watts each—precision machined of Tellurium Copper, processed with special iron plating to eliminate need for grinding, filing and other maintenance problems. Handle and all tips (UL) listed.

Super Hi-Heat Chisel Tip #4033
For production lines, service, repair, AN connectors. 1⅝" long, ¼" wide tip. Copper base plated with iron & silver. 900° F. 47½ W., 115 V. AC-DC.

Super Hi-Heat Heavy Chisel Tip #4039
For extremely heavy production service. Iron plating over copper base, coated with silver, needs no filing or grinding. ⅜" dia., 1¼" long. 47½ W., 1000° F. 115 V., AC-DC.

Super Hi-Heat Pyramid Tip #4036
For extra duty soldering, heavy wire-wrapped joints, etc. ⅜" dia., 1⅛" long. Iron plating over copper, coated with silver. 1000° F., 47½ W., 115 V., AC-DC.

Super Hi-Heat Threaded Unit #4035
For use with special Elkaloy A interchangeable tiplets. Designed for resistor wiring, germanium diodes, AN connectors. 47½ W., 115 V. AC-DC, 950° F. Iron base chrome plated for corrosion resistance. ⅜" dia.

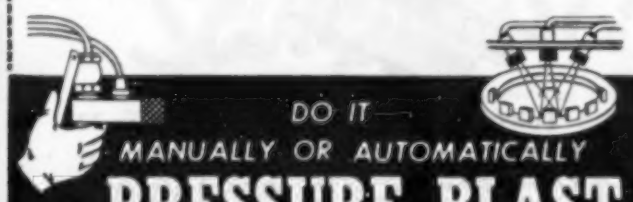
For information on these and other Ungar Tips, write for Catalog A

Ungar ELECTRIC TOOLS, INC. P.O. BOX 312, VENICE, CALIFORNIA

If you write maker identify as IEN-13764

which of these DEBURRING PROBLEMS are yours?

- ☐ Machining slivers
- ☐ Feather edges
- ☐ True burrs
- ☐ Low drilling crowns
- ☐ Associated chips
- ☐ Light extruded metal
- ☐ Tool fuzz
- ☐ Gear teeth
- ☐ Deep holes
- ☐ Spirals
- ☐ Recesses
- ☐ Slots
- ☐ Threads



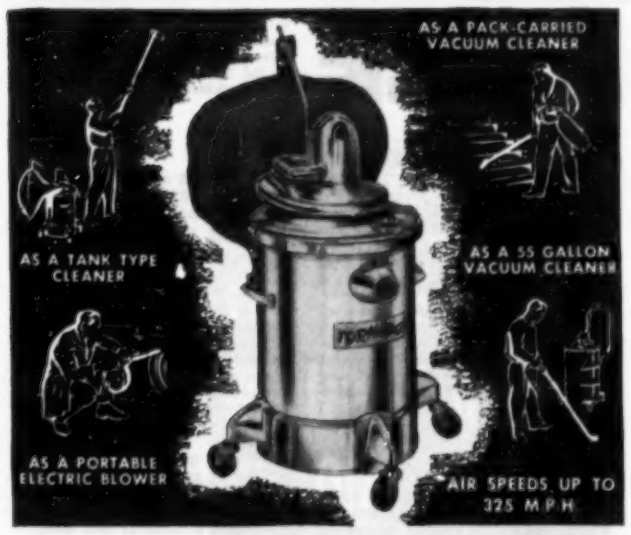
DO IT MANUALLY OR AUTOMATICALLY WITH **PRESSURE BLAST** WET BLASTING

TWO SPEED

This ad is your coupon. Check off your problem (s) and mail today for free illustrated literature . . . Application data . . . case history information!

THE CRO-PLATE COMPANY INC.
747-3 WINDSOR ST. HARTFORD 5, CONN.

If you write maker identify as IEN-13765



The NEW TORNADO®

More Versatile Cleaning From Floor to Ceiling

This new Tornado cleaner brings you even greater cleaning power and longer life . . . with air speeds up to 325 M.P.H. 3 sizes: ¾ H.P., 1 H.P. or 1½ H.P.

Tornado picks up all dirt, dust, chips, oil or other liquids without any conversion.

The powerful motor unit removes from the cover with a simple ¼ turn. The same motor unit can then be used for:

1. **A pack-carried vacuum cleaner**
2. **A powerful portable electric blower**
3. **A jumbo cleaner for use with a standard 55 gal. drum**

No matter what your cleaning job—Tornado will do it better and faster—run for hours & hours of constant duty under the worst conditions.

Write for Bulletin 660

We'll be glad to demonstrate in your company—just tell us where and when.

1/4 turn removes motor unit.
All sizes interchangeable.

Motor unit & adaptor cover fit any standard drum for doing the big cleaning jobs.

BREUER ELECTRIC MFG. CO.
5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN-13767

Truck - Electric power lift rates 2 ton, operates in 56-in. aisles

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

Warehouser design

Platform widths are 19, 24 and 26 in. and lengths are 36, 42, 48, 54 and 60 in. for this new Type RL-4 electric power truck. Drive provides for three speeds forward and reverse and includes time delay controls between the speed changes for smooth acceleration. Controls are centered at the operator's position. His compartment is sufficiently long, front to back, so his body does not extend beyond the truck. He is protected by steel guards on the sides. Steering is controlled by a wheel with a spinner knob. Wide face rear wheels and spring loaded dual caster wheels provide four-point contact on flat or uneven floors.

If you write maker identify as IEN-13768

Layout - Granite surface plates measures 9 by 12 in. to 72 by 144 inches

Source: CHALLENGE MACHINERY CO.
1555 Fulton St., Dept. IEN, Grand Haven, Mich.

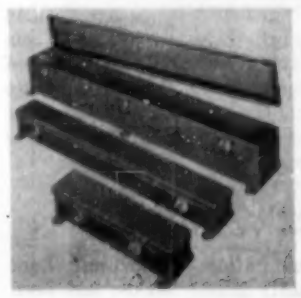
Precision as specified

Clovis Black Granite is the material employed in a new line of surface plates, each of which is finished in a rotary honing process. The plate is non-magnetic and presents a distortion-free frosted surface for "floating movement" that assures natural release of the air seal under work or gages to prevent sticking, ringing or vibrating. Twenty-four standard sizes range from 3 to 16 in. in thickness and can be specified plain or with two or four ledges. Eight standard accuracies range from 0.002 to 0.00005 inch.

If you write maker identify as IEN-13769

Electric Duct - Wiring troughs particularly for use on equipment

Source: HOFFMAN ENGINEERING CORP.
1055 Tyler St., Dept. IEN, Anoka, Minn.

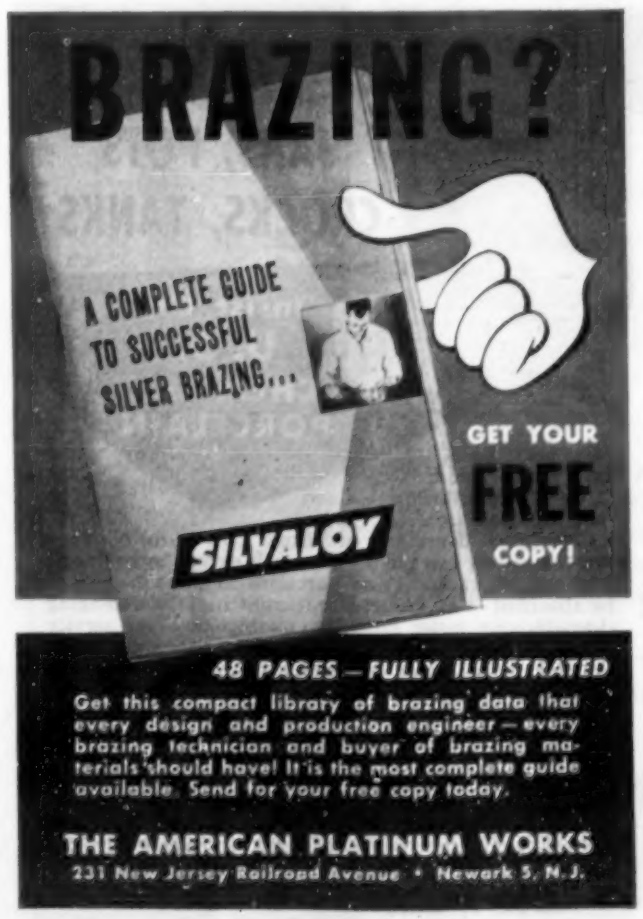


JIC Standards

Steel, in welded assembly, is employed in the construction of this new line of wiring troughs. The body is equipped with mounting feet and with covers that clamp in place on neoprene gaskets to provide a seal that is tight against entrance of oil, dust and water. There are no extra conduit knock-outs and the assembly meets all JIC specifications for totally enclosed troughs. Two sizes measure 2½ and 4 in. in square cross section. The first is in four lengths from 12 to 36 in. and the second is in four lengths from 18 to 72 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

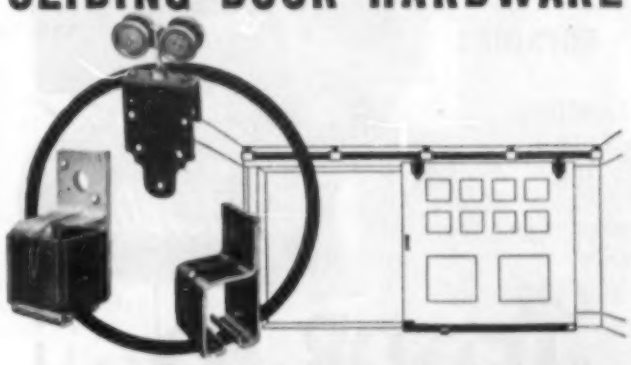
If you write maker identify as IEN-13770



If you write maker identify as IEN-13771

COBURN

SLIDING DOOR HARDWARE



For All Industrial Door Installations

- ***Door hangers, brackets and track for doors weighing up to 1500 lbs.; up to 3 inches thick.***
- ***Straight and curved track in standard lengths of 6, 8 and 10 feet.***

For information write to Sales & Engineering, 56 Sterling Street, Clinton, Mass.; or see your classified telephone directory.

2685

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as IEN-13772

This Building is TOPS

Expanding business often demands more space—but sometimes there's no more room for new buildings. What to do? Why not install Armco Steel Building penthouses on roofs of existing industrial buildings? Shown here is a typical installation by a large company.

The light weight of STEELOX Panels simplifies problems of roof-top structures. Yet, they have ample strength to make a sturdy, rigid building. You choose from a wide range of building sizes to meet every need.

Erection of Armco Steel Buildings is easy, fast and economical. They are noncombustible, weather-tight, and need little upkeep.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3594 Curtis Street, Middletown, Ohio

ARMCO®

If you write maker identify as IEN-13773

F. O. S.®† IS VERSATILE,
AN AID TO ANY WORKER'S SKILL.
IT DOES AT LEAST A SCORE OF TASKS:
COVERS, HOLDS, SEALS, OR MASKS!

You tape it best with F.O.S. Industrial Tape . . . product of

THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

Write for samples, literature, prices

†Friction One Side

If you write maker identify as IEN - 13774

Make overhead space contribute to plant earnings

CAPACITIES ½ TO 5 TON

CM METEOR WIRE ROPE ELECTRIC HOIST

• SINGLE AND TWO SPEED MODELS

METEORS offer real materials handling help in many ways. Read all about their unusual operating advantages in METEOR CATALOG No. 142—also illustrates all details of suspension and construction. Prices included. *Sent on request*

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ontario

If you write maker identify as IEN - 13775

WHEN SPACE IS LIMITED AND LOW COST IS DESIRED

...SPECIFY *UNITED ELECTRIC*

Type J7 is a compact, precision-built pressure-vacuum control used for controlling air, gas or liquid pressures. It is especially suitable for applications where limited space, weight, and low cost are important factors. Write for Bulletin #5-7.

Type J40 is an inexpensive, lightweight pressure control that is widely used on industrial equipment, aircraft and other engine applications. It is reliable and rugged—ideal for applications that do not require a closed head. Write for Bulletin #5-9.

Switch Ratings (both Types): 15 amps at 115 or 230 volts AC. DC or 20 amp AC switches available on request.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 13776

CLEAN WITH STEAM

. . . you never made a better **$379** *Investment*

Dissolves and flushes dirt and grease. Cleans equipment, rolling stock, floors, walls. Disinfects, deodorizes, sterilizes. Melts ice and snow, strips paint. Saves time, trouble, money.

VAPOR UPGRADER JUNIOR HOT HYDRAULIC CLEANER MODEL 5096

Paste to 2-cent Post Card and Mail

Safe. Simple. Compact. Dependable Steam in 70 seconds. Pressures to 125 p.s.i. 110-volt, a.c. Cleaner-mixing nozzle. Price complete, f.o.b. factory. Let us show you what "Junior" can do!

Vapor Heating Corporation, Chicago

I'm interested in the UPGRADER JUNIOR. ☐ Please send literature. ☐ Put me down for a free demonstration.

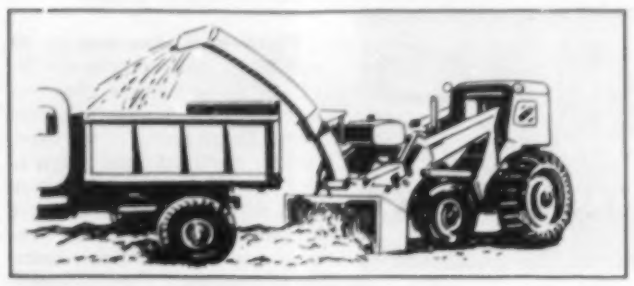
Individual .....
Company .....
Street .....
City ..... Zone ..... State .....

VAPOR HEATING CORPORATION, 80 E. Jackson Blvd., Chicago 4

If you write maker identify as IEN - 13777

Snow Plow - Engine driven unit to mount on power shovel or tractor

Source: WM. BROS BOILER & MFG. CO.
1057 Tenth Ave. SE, Dept. IEN, Minneapolis 14, Minn.



Particularly for truck loading

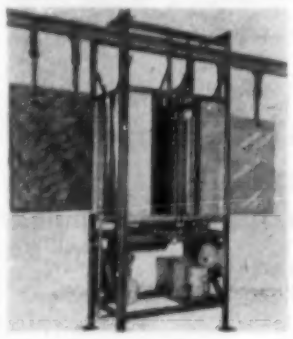
A dump truck, holding 5 yd., can be loaded in about ½ min. by means of this new Series-A Sno-Flyr rotary plow. It is driven by its own 30-hp. engine and is designed to mount in the place of a loader bucket on a power shovel or on a track type tractor or motor grader or four wheel drive Jeep.

The plow gathers snow and throws it through a casting chute that can be rotated through a 180-deg. horizontal arc to load a truck from either side or the front. Operating height can be varied by adjusting the power shovel supports. Split spiral design of the rotary unit makes it possible to handle wet chunky or hard packed snow. Three widths range from 52 to 78 inches.

If you write maker identify as IEN - 13778

Cleaning - Wet scrubbing machine for metal plates prior to plating

Source: FULLER BRUSH CO.
3580 Main St., Dept. IEN, Hartford 2, Conn.



Built to order

Residue, resulting from a buffing operation, is removed from metal plates carried under an overhead track through this new Cathode Plate Scrubber. Forward movement is by a roll drive at about 3 to 8 ft. per minute. Vertical scrub brushes are chain connected to two ¾-hp. drip proof motors equipped with geared heads. A ¼-hp. variable speed motor drives the feed rolls.

The brushes measure 47 in. in length. They employ a fill consisting of 0.007-in. crimped black nylon on a stainless steel backing. The brushes operate in connection with a spray to scour the plate surfaces. A clear water rinse is applied as the plates leave the machine ready to move to an electrolytic plating process.

If you write maker identify as IEN - 13779

New formula, covering a combination primer and knot sealer to be used in painting knotty grade woods, has been developed by Western Pine Association, 510 Yeon Bldg., Dept. IEN, Portland 4, Ore. Knotty wood can be primed and sealed in one application. The Association will supply names of the present manufacturers on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13780

Jars, pots, tanks, etc. made from "U.S." Chemical Porcelain are leak-proof, mechanically strong, dense and of virtual *zero* porosity. They are completely inert to all chemicals except hydrofluoric acid and hot caustics. And porcelain contains *no iron* to be absorbed — no induced contamination! Its non-aging characteristics make for long, maintenance-free service life. No-seam construction, rounded corners and smooth lustrous white glazed surfaces provide for quick, easy cleaning.

Our complete Chemical Porcelain line of jars, pots and tanks includes a wide variety of stock items in capacities ranging from 2½ to 200 gals.

WRITE TODAY — *ask for* BULLETIN 410

U.S. STONEWARE *Process Equipment Div.*
Akron 9, Ohio 241-D

If you write maker identify as IEN - 13781

Save! ON SWITCHES

FOR APPLIANCES, INSTRUMENTS, TOYS, RADIOS, TV SETS, SMALL MOTORS, etc.

Low-priced Stackpole line switches in 22 different styles provide practically any needed switching arrangement. Types rated from .5 to 3 amperes. Underwriters approved. Write for Switch Bulletin RC-9B.

Electronic Components Division
STACKPOLE CARBON CO., *St. Marys, Pa.*

STACKPOLE

Fixed and Variable Resistors • Iron Cores • Ceramag® ferromagnetic Cores • Molded Coil Forms • Low-Value Capacitors, etc.

If you write maker identify as IEN - 13782

FREE

valuable help in improving welding results, cutting welding costs. From "America's Leading Institution Devoted To The Research and Manufacture of Specialized Metal-Joining Alloys."

TIS 2241
MANUAL OF DESIGN AND WELDING ENGINEERING. 20-page digest of most useful, popular book Eutectic ever offered. Basic welding "know-how." Valuable to engineers, foremen, welders. Suggests new, profitable uses for welding. Shows successful designs possible with "non-fusion" welding. Covers steel welding, all metals. Hints on weld inspection and control.

TIS 800
TOOL & DIE SALVAGE MANUAL. 68 pages of effective tool and die welding and salvage recommendations. Includes basic welding procedures. Covers cast iron, kirksite and shoe or "clicker" dies. Has useful tempering chart and fully develops unique ability of "non-fusion" welding to eliminate damage to base metals. Special sections on new methods of production welding tools, producing forgeable welds. Hundreds of hints for cutting tool costs.

TIS 1010
TRUCK AND CAR FLEET MAINTENANCE MANUAL. 56 pages of pictures and text giving practical welding help on "101" automotive jobs. Tells how to salvage castings, repair shafts, transmissions, clutch and drive assemblies. Describes frame and spring repairs. Invaluable for saving time, money on body repairs and for wear resistant overlays. Every industrial, repair shop and garage welder needs this book.

TIS 2268
HOW TO OVERCOME YOUR WELDING PROBLEMS 8 pages of basic welding procedures plus bead, joint illustrations very helpful to every "occasional" or maintenance welder. Time and money saving tips for all metals, solutions for many welding problems. Helps the welder check his work step-by-step. Universally useful book explains effects of heat, proper design for welding, metal affinity, weld strength, value of fluxes, etc.

All Eutectic literature is prepared from actual case histories showing how Eutectic Low Temperature Welding Alloys solve welding problems and make possible substantial savings which can not be realized with conventional materials.

SEND FOR YOUR FREE COPIES TODAY!

EUTECTIC WELDING ALLOYS CORPORATION
40-40 172 STREET, FLUSHING 58, NEW YORK

If you write maker identify as IEN - 13783

Punch with a PACIFIC

Mathews Conveyor Co. *says -*

"Our 300 ton Pacific Hydraulic Press Brake has been in operation for three years. We like it for its flexibility and because it has been trouble free. As an example, we gang-punch up to forty 7/16" hex-holes in 3/16" channel – and also a 1⅛" hex-hole in 1" steel plate. We recommend the "PACIFIC" highly to other shops."

PACIFIC INDUSTRIAL MFG. CO.
848 - 49TH AVENUE • OAKLAND, CALIF.

If you write maker identify as IEN-13784

REVOLUTIONARY NEW IDEA IN SPLICING...

Cold-pouring insulating resin complete and ready-to-use any time . . . any place!

"SCOTCHCAST"!

Now you can turn out completely insulated and sealed cable splices in minutes with "Scotchcast" Electrical Embedment Resin No. 4 in the new ready-to-use "Unipak".

"Unipak" is a new single-package envelope containing famous "Scotchcast" Resin and hardener. To prepare the "Scotchcast" for use, you simply squeeze the package to mix—then, pour the activated resin and hardener into the splice mold. "Scotchcast" quickly cures into a tough, protective casing that resists acids, alkalies, solvents, and oils—has excellent adhesion to most metals, plastics, and conductors.

We'll be glad to send you complete information on this revolutionary new idea in splicing—just mail us a post card today.

SCOTCHCAST Electrical Embedment Resin

The term "Scotchcast" is a registered trademark of Minnesota Mining and Manufacturing Company, St. Paul 6, Minn. General Export: 122 E. 42nd St., N.Y. 17, N.Y. In Canada: London, Ontario, Can.

3M

If you write maker identify as IEN-13785

You can depend on the rugged MARK-TIME "5400" Bell Time Switch

SPECIFICATIONS

UL approved for 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation, AC only. Timings available from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request.

This Mark-Time switch is built to uphold the reputation of your product. Install it in your appliances, devices or machines, and give your customers a *double-purpose* time switch. "5400" turns OFF the circuit at the end of a pre-set time period . . . and gives a clear warning bell signal. Your customers will like that *double* service!

"5400" has a wide range of applications . . . is available with a wide variety of modern dials and knobs . . . can be supplied as an "ON" type of unit on special order.

Write today for full details and prices.

MARK-TIME

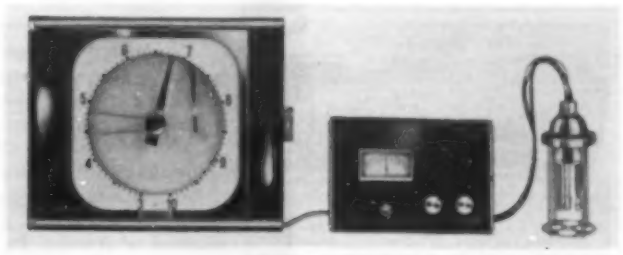
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by SPERRY GYROSCOPE OTTAWA, Limited 3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as IEN-13787

Control - Electronic equipment for continuous pH record and control

Source: BRISTOL COMPANY
107 Bristol Road, Dept. IEN, Waterbury 20, Conn.



Illustrated details in Bulletin Q1304

Model W designates the Beckman amplifier now employed with a round or strip chart electronic Dynamaster pH recorder-controller and an electrode assembly of either flow or immersion types for continuous regulation of pH in a process. The equipment is available with a range of final control elements for addition of gaseous, liquid, slurries or solid reagents for control purposes.

Potential, developed by the hydrogen-ion concentration in an electrolyte, is measured by the glass electrode in assembly with a saturated calomel electrode and a thermal compensator. The calomel electrode has a constant potential which is not affected by changes in hydrogen-ion concentration and so is employed as the reference. The glass electrode becomes the measuring elment. It is a conductor.

The compensator measures the temperature of the solution and adjusts the emf.-pH relationship in accordance with the temperature coefficient of the electrodes. The two electrodes constitute an electrolytic cell. The emf. output from the electrodes is amplified and received by the electronic Dynamaster. This instrument converts the signal to a form useful for process control. It makes a record or initiates a signal to a final control for addition of corrective reagent.

If you write maker identify as IEN-13788

Welding - AC arc machine in three ratings, 300 to 500 amperes

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

Bulletin ADC 719

Stepless current control, employing a moving primary coil that is raised or lowered by turning a crank, features this new Bumblebee arc welding machine. It is particularly suited for heavy section welding where high current is desirable. It is suited also on general industrial applications from light duty up.

The smallest unit in the line is adjustable between 38 and 375 amperes. The largest one can be set between 65 and 625 amperes. Optional equipment includes an automatic hot start device which provides an extra surge of current on striking the arc. Arc stabilizing capacitors, power factor capacitors, a primary switch, a voltage reducing control and a louver canopy also are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13789

Low Cost expansion program for large or small shops

with Goodrich Hydraulic

Duplicators
Duplicators

For Tool Room Work or Mass Production

Adapt old or new machinery for small or large operations. Tolerances are held to precision limits for master pattern and template work without constant checking. Duplicators shut off when straight machine operation is desired.

Simplifies
- Milling
- Planing
- Grinding
- Contouring
- Die Sinking
- Boring

Send for Free Folder

Manufactured by
Automotive Service Tools Inc.
Division of Lansing Die Sinking Co.
617 May Street Lansing, Michigan

If you write maker identify as IEN-13790

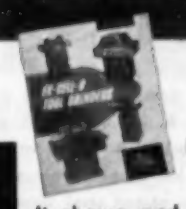
Tool Grinders BY Ex-Cell-O

STYLE 44-A, Ex-Cell-O Precision Carbide Tool Grinder. A new model for sharpening single point tools. Inbuilt motor precision spindle. Ample pressure coolant flow.

FOR CARBIDES—CAST ALLOYS—HI-SPEED STEELS

A complete line of grinders, for efficient and economical sharpening of single point tools. All are double-end models using cup type wheels; with large tool rest tables, easily adjusted.

54-50



WRITE FOR THIS BULLETIN

It shows and describes five models; also gives important data on tool grinding. Write today to Ex-Cell-O in Detroit for Tool Grinder Bulletin.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

XLO

If you write maker identify as IEN-13791

On any carbide grinding job...

Nothing cuts like a Norton diamond wheel

Norton diamond wheels in your carbide grinding pay for themselves in the shortest possible time.

Available in three bond types: *vitrified,* generally preferable for single-point tools and chip breaker grinding; *resinoid,* for multi-tooth cutters and cutting-off; *metal,* where durability and resistance to grooving are primary. (*NOTE: For small-volume requirements, especially in single-point tool applications, the Norton K Bond* CRYSTOLON* *wheels are often the best investment.*)

SEE YOUR NORTON DISTRIBUTOR for aid in selecting the correct diamond wheels. Ask him for the booklet, "Grinding Carbide Tools." Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass. W-1582

*Trade-Mark U. S. Reg. Pat. Off. and Foreign Countries

Making better products . . . to make other products better

NORTON
and its BEHR-MANNING division

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

If you write maker identify as IEN-13792

IF YOU USE INDUSTRIAL FABRICS OR TAPES

You Should Have These

FLIGHTEX

FLIGHTEX FABRIC

SWATCH BOOKS

Our staff of engineers is at your service to help solve your fabric and tape problems.

☐ GLASS ☐ COTTON
☐ VINYON ☐ DYNEL
☐ ORLON

Please send the swatch books checked.

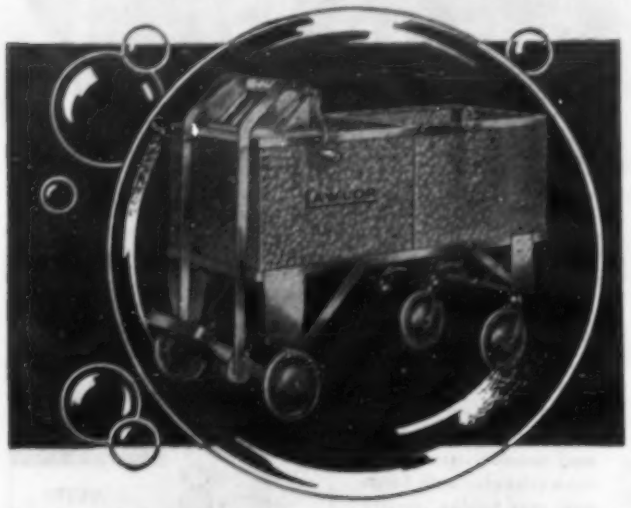
NAME .....
FIRM .....
ADDRESS .....
CITY ..... STATE .....

FLIGHTEX FABRICS, INC.
91 WORTH STREET
New York 13, N. Y.

If you write maker identify as IEN - 13793

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



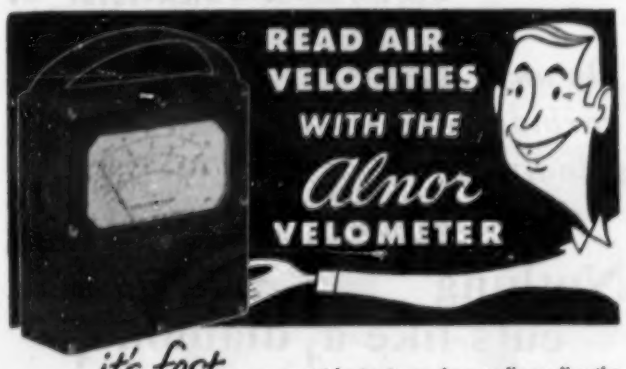
8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size of floor

S. C. LAWLOR CO. Quality Floor Equipment for 50 Years

120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 13794



it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2448-G. Illinois Testing Laboratories, Room 517, 420 N. La Salle St., Chicago 10, Ill.

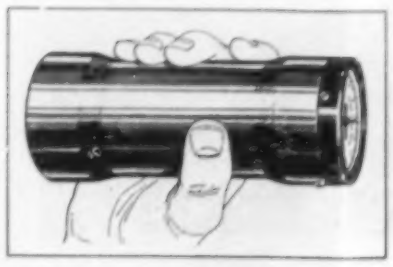
Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13795

If you write maker identify as IEN - 13796

Testing - Portable analyzer reads carbon dioxide or oxygen in a gas

Source: BURRELL CORPORATION
2223 Fifth Ave., Dept. IEN, Pittsburgh 19, Pa.



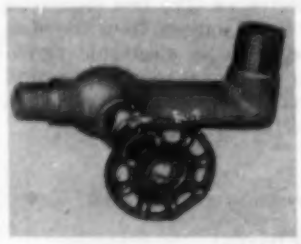
Kwik-Chek

Illustrated is a new portable instrument that is connected to a source of gas or gas mixture by means of a length of rubber tube and a pump. The instrument carries a charge of Burrell Disorbent for carbon dioxide or Burrell Oxsorbent for oxygen. The pump is employed to deliver a charge of the gas to be tested. Then the instrument is shaken and a reading is made on the dial at one end. This dial reads from 0 to 20 per cent. The instrument, with its tube and pump, are supplied with instructions in a metal carrying case. Solutions are available in sets of three charges each.

If you write maker identify as IEN - 13797

Valve - Elbow pipe line unit for use on bottom of fuel oil tanks

Source: ROCKFORD BRASS WORKS
700 S. Main St., Dept. IEN, Rockford, Ill.



Prices on request

Number 807 designates a new line valve with ½ or ¾-in. inlet and ⅜-in. outlet to install on the bottom outlet of oil storage tanks. The valve stem lies in horizontal position to make the operating handle accessible beneath the tank. The valve is packed and pressure tested after manufacture.

If you write maker identify as IEN - 13798

Wood Working - Chain saw, motor driven, for single hand use

Source: PORTER-CABLE MACHINE CO.
47 Exchange St., Dept. IEN, Syracuse 8, N. Y.

Weighs 7½ pounds

Logs to 7 in. in diameter can be cut off straight with this new saw. Larger work, to 14 in. in diameter or width, can be cut through by pivoting the saw around the work center or by cutting down in two strokes. The new Model 128 weighs 7½ lb., measures 16 in. overall. It mounts an Oregon chipper chain and is driven by a universal 110-volt motor with an extension cord.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13799

If you write maker identify as IEN - 13800

Does your product have to be traverse-wound from slitting, coating, extrusion or any similar process, on to spools, tubes, or cones? If so, it will pay you to read this new bulletin on Leesona Take-Up.

Learn how these modern precision-winding machines protect and "dress up" a wide range of products, eliminate extra operation and handling, save time and money. Packages are ready for shipment or any further use *without rewinding*. Send for bulletin *"Precision-Wound Packages"* and get the profit-boosting facts.

UNIVERSAL WINDING COMPANY
P. O. Box 1605, Providence 1, R. I.
Boston • Philadelphia • Utica • Charlotte
Atlanta • Chicago • Los Angeles
Montreal and Hamilton, Canada

If you write maker identify as IEN - 13801

Working with plants throughout the country Elox found these interesting facts . . .

1. Some employees hide scrap
2. Some employees are afraid to report scrap
3. Some department heads won't admit the amount of scrap they actually have
4. Management didn't know how to solve the salvage problem

Today Elox equipped plants salvage 100% of scrap due to broken taps, drills, reamers, etc., profitably. Even on parts costing as little as 25c.

we can show YOU how!

elox corporation of michigan

724 N. Rochester Road • Clawson, Michigan

If you write maker identify as IEN - 13803

CHESTER *Electric* HOISTS

Make heavy handling jobs easier!

Now, an outstanding new line of Chester Electric Hoists is available to help you put more heavy handling jobs on a paying basis in your plant.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us for specification folders, E 853 and EC 953.

MODEL EC

MODEL E

Remember Chester, too, for the complete line of Spur Geared Hand Chain Hoists and Overhead I-Beam Trolleys. ¼ to 25 ton. Ask for Catalog.

MODEL EC: 3 sizes, ¼ to 1 ton. Welded alloy steel link chain, pendent rope control. Lifts adaptable up to 66 ft.

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 30 f.p.m.

National PRODUCTS

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 13804

tough, flexible CaPlugs insure dirt-free arrival of Alemite Accumeter Valves

Furnished as a key component of an Alemite Accumeter Centralized System for machine lubrication, this tiny, accurate valve must be kept dirt and grit-free during shipment *. . . and it is!* Easily-applied Tapered CaPlugs seal all three openings.

Says Stewart-Warner Corp., manufacturer of Alemite Systems, "All of our equipment that is tested on the assembly line is capped or plugged with CaPlugs. . . . They also help impress the customer with the steps that have been taken to protect the equipment and convince him of the continuing need for protecting lubricants against contamination."

Molded of tough, flexible Polyethylene, CaPlugs are impervious to all common chemical reagents, acids and solvents. They will not chip, break or shred under most severe conditions.

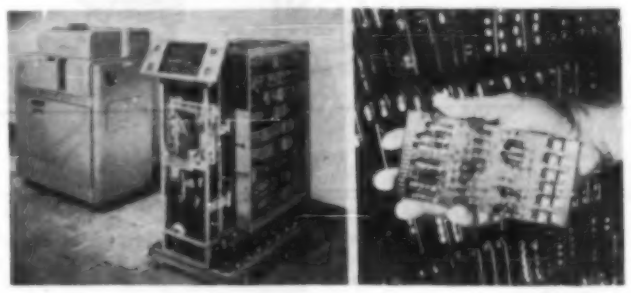
Furnished in five standardized designs, CaPlugs are stocked in over 100 sizes to meet most requirements. Write for catalog, price lists and free CaPlug assortment.

CaPlugs
DIVISION
PROTECTIVE CLOSURES CO., INC.
2203-5 ELMWOOD AVE. BUFFALO 23, N. Y.

If you write maker identify as IEN - 13806

Calculating - Electronic machine for computing and data processing use

Source: INTERNATIONAL BUSINESS MACHINES
500 Madison Ave., Dept. IEN, New York 22, N. Y.



Built to order for specified application

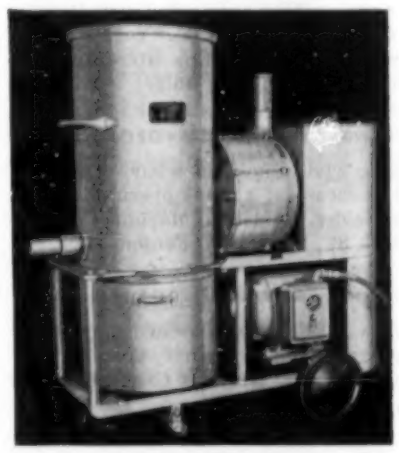
Printed wiring replaces a large proportion of the wiring normally employed, and some 2,200 transistors replace electronic vacuum tubes in this new experimental calculating equipment. It is composed of a high speed punching unit, to the left in the illustration, and the transistorized calculating unit to the right. The housing of the latter has been removed to show the bank of printed wiring panels on which the transistors are mounted.

The new assembly occupies approximately one-half the space and requires only 5 per cent of the power called for by a vacuum-tube assembly of comparable capacity. There are 595 printed wiring panels on which the transistors are mounted, each panel about two-thirds the size of an IBM card. The new machine is comparable in capacity to the company's Type 604 electronic calculator of which about 2,000 are now in use. The transistors effect a 95 per cent reduction in power requirements of the electronic unit in addition to reduction in size.

If you write maker identify as IEN - 13807

Cleaning - Portable vacuum machine rates 7½ hp., for wet or dry pick-up

Source: INVINCIBLE VACUUM CLEANER MFG. CO.
Dept. IEN, Dover, Ohio



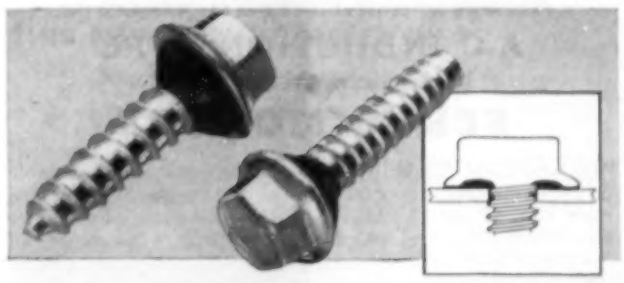
Bulletin "Model 700"

The motor on this new vacuum machine drives a five-stage turbine that supplies suction pressure capable of picking up dirt, litter, liquids, chemicals, foodstuffs, metallic parts. Abrasive material can be handled since complete separation precedes entry of the air into the turbine.

The machine weighs 550 pounds. It measures 54 by 23 by 55 inches. It can be adapted to material conveying operations and special production work as well as for cleaning. It is available with primary tanks, cyclone separators or attachments to meet given conditions.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13808



New *Tuff-Tite Fastener Prevents Leaks—Protects Surfaces—Absorbs Shocks—Stops Squeaks**

Tuff-Tite is a new multi-purpose fastener with a one-piece metal head and assembled neoprene washer that gives you quick, secure, economical, leakproof fastening of metals and plastics.

Leaks are impossible between the head of the screw and the metal washer because they are made as one piece. When this fastener is tightened, the pre-assembled neoprene washer is trapped and controlled by an undercut in the washer head. The neoprene is forced into the hole and around the threads to form a watertight and airtight seal.

Tuff-Tite fasteners are available as self-tapping screws, thread cutting screws, drive screws, machine screws, stove bolts, wood screws, nails and special products. They are made in a variety of metals and head styles. Write for Bulletin TL-97.

**Trademark*

Townsend Company
NEW BRIGHTON, PENNSYLVANIA

If you write maker identify as IEN - 13809

ENGRAVE

NAME PLATES • PANELS • DIALS
in your own shop

Lowest set-up time for unskilled labor

10,000 IN USE **Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:**

- **Adjustable for 15 ratios.**
- **Self-centering holding vise.**
- **Automatic depth regulator.**
- **Adjustable copy holders.**

Send direct to us for booklet IM 23

NEW HERMES ENGRAVING MACHINE CORP.
13-19 University Place • New York 3, N. Y.

If you write maker identify as IEN - 13810

IT TAKES LESS TIME TO MICRO-FINISH HARD MATERIALS WITH

ELGIN DIAMOND

This booklet will help you Write for your free copy now!

See pictures of Elgin diamond in application . . . gives details of method, grades to use and time required. Write today!

ELGIN NATIONAL ABRASIVES DIVISION **WATCH COMPANY**
Dept. H
ELGIN, ILL.

If you write maker identify as IEN - 13811

UNIVERSAL DRILL BUSHINGS INSURE PERFECT ALIGNMENT AND LONG LIFE OF PRODUCTION TOOLS

181-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 13812

Meet every test in copper line service

JENKINS Solder-End VALVES

Easy to install
— accurate fit to tubing

Positive control
— will not distort under intense heat of soldering

Lasting economy
— designed with an extra measure of endurance to withstand unusual strain in operation

SEND FOR THIS NEW FOLDER

Describes complete line of Jenkins Solder End Valves, gives dimensions, and instructions for installation. Ask your Jenkins Distributor for Form 198, or write for your copy today. Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

SINCE 1864

If you write maker identify as IEN - 13813

How a 'Sexauer' Easy-Tite faucet washer costing pennies can save you $115.22 a year!

A tiny, 1/32" faucet leak wastes 95,040 gallons—*$24.14* worth*—of water yearly.

Hot water leakage is even costlier . . . Fuel waste adds upward to *$91.08*** more to the loss. Total down the drain: *$115.22.*

And this is the dollar loss caused by only *one* pinpoint leak!

Fuel Waste		Water Waste	Total Waste
Oil (792 gals.)	**$91.08	$24.14	$115.22
Coal (9,879 lbs.)	88.91	24.14	113.05
Gas (84,411 cu. ft.)	84.81	24.14	108.95

*Water costs (figured at $1.90 for 1,000 cu. ft.) authenticated by Hackensack Water Co. **Fuel costs authenticated by American Gas Association.

Save money; cut costs; stop leaks with dependable 'Sexauer' Easy-Tite faucet washers.

Built like a tire with Fiberglas reinforcement

Easy-Tite faucet washers are made of a special du Pont product, instead of rubber, and reinforced with Fiberglas. The result is a washer that resists the closing squeeze that splits and mushes ordinary washers. And Easy-Tites withstand destructive heat (up to 300° F. by test). These features explain why *'Sexauer' Easy-Tites outwear ordinary faucet washers 6 to 1!*

By avoiding labor on those 5 additional repairs, Easy-Tites cut today's high maintenance costs 83⅓%! But Easy-Tites not only save water, fuel, labor; they also prolong the life of expensive fixtures.

FREE CATALOG—Easy-Tite faucet washers are just part of the line of over 3000 'Sexauer' Triple-Wear plumbing repairs parts and patented precision tools.

Get complete information on Easy-Tites and other cost-cutting 'Sexauer' materials. Send for our FREE, new 118 page Catalog H. Fill in and mail the coupon today.

J. A. Sexauer Mfg. Co., Inc. Dept. K-124
2503-05 Third Ave., New York 51, N. Y.

Gentlemen: *Please send me a copy of your FREE, new 118 page Catalog H.*

My name.....Title.....
Company or Institution.....
Street.....
City.....Zone.....State.....

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

Brief reviews to advise you of available new information published by the manufacturers covering products they offer.

If you write maker identify as IEN - 01013

AIR CONDITIONING . . Use individual package-type units to condition an entire building, urges new 20-page Bulletin A-3007. It covers costs, installation, maintenance, performance, quotes as an example a building of 350,000 sq. ft. Philco Corp., Tioga & C Sts., Dept. IEN, Philadelphia 34, Pa.

If you write maker identify as IEN - 01014

ALLOYS . . Heat-resistant material for high-temperature service to 2,200 deg. F. in furnace tubes, muffles, fans, support bars, gas generators. Performance data in 4-page folder, "Alloy NA-22H." Blaw-Knox Co., National Alloy Div., 2050 Farmers Bank Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as IEN - 01015

ALUMINUM . . Extruded shapes including angles, channels, bars, T-section units, tubes, specials. Dimensional drawings and tables in 12-sheet catalog, "Vampco Extrusions". Valley Metal Products Co., Dept. IEN, Plainwell, Mich.

If you write maker identify as IEN - 01016

BEARINGS . . Single and double-row ball bearings, standard and self-aligning models, also in pillow-block and flange-mounting assemblies. Sizes, interchangeability chart, load ratings, in 28-page Catalog 443. Ahlberg Bearing Co., 3025 W. 47th St., Dept. IEN, Chicago 32, Ill.

If you write maker identify as IEN - 01017

ROLLER BEARINGS★ . . Crowned rollers are a feature of Tru-Rol bearings. Selection data, application and mounting instructions in 36-page Catalog TR-854-DC. Rollway Bearing Co., Seymour St., Dept. IEN, Syracuse 4, N. Y. ★Your company letterhead and title required to obtain this literature. The manufacturer will service direct inquiries only.

If you write maker identify as IEN - 01018

BUILDINGS . . Awning-type aluminum windows are top pivoted to open outward by means of a crank operator. Types, sizes, list prices in 6-page folder. Industrial Machine Co., Tru-Seal Window Div., 301 Oak St., Dept. IEN, Fenton, Mich.

If you write maker identify as IEN - 01019

CHUCKS . . Self-centering design for glass-working lathes is handwheel actuated. Five sizes have capacity from 1/16 to 27 inches. Bulletin WGL-100, 4 pages. Westcott Chuck Co., Box 270, Dept. IEN, Oneida, N. Y.

If you write maker identify as IEN - 01020

CLAMPS . . Tracing templates are offered for the company's quick-acting toggle clamps: Full, half or quarter scale, 68 in all. Ask for "De-Sta-Co Tracing Templates Kit." Detroit Stamping Co., 342 Midland Ave., Dept. IEN, Detroit 2, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13815

A PAID NEWS ADVERTISEMENT BY G-M LABORATORIES, INC.

A-C INDUCTION TYPE
New Series 15 and 18
SERVO MOTORS

Two new G-M Miniature Servo Motors are now available for use in electronic control circuits. The motors are standard frame sizes 15 and 18 which are 1.437" and 1.750" in diameter respectively, and are designed for use in a wide variety of equipment such as computers, gun sights, navigation equipment, guided missiles, radar and similar applications. These light weight, high torque, low inertia, two-phase induction motors are available in 2, 4 and 8-pole models for 400 or 60 cycle supply, and can be supplied to meet performance specifications for military servo motors, Mark 7 and Mark 8. The control phase can be wound for connection *by the user* for either series or parallel operation. The stators of the motors, as in all G-M Servo Motors, are embedded in an insulating compound of high dielectric strength and high temperature stability. This material has a low mechanical coefficient of expansion and great stability at high temperatures. High dielectric strength is maintained between windings and housing when at high altitudes. Write for information on G-M Size 15 and/or Size 18 Servo Motors to

G-M LABORATORIES, INC.
4334 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 13816

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close MULTIWALL PAPER BAGS

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 13817

To Keep Up To Date . . .

on new developments in Actionflex fiberglas-silicone laminated hose for aircraft, start your file now with this new, basic portfolio of engineering and product bulletins. It will be sent to you by return mail and future bulletins will be forwarded automatically.

If you write maker identify as IEN - 13818

View of Model 1405 with table removed

AIR-HYDRAULICS Heavy Duty Air Index Tables allow no backlash, skips or overruns because: both the cushioned stop and air speed are adjustable to compensate for variations in load weights and diameters • The index pin shifts to the next notch while table is stationary and is only disengaged by the locking dog after indexing • The locking cylinder insures firm seating of dog in ring notch • Air cushioned stop eliminates wracking jar.

5 versatile sizes from 10" to 48" in diameter (Model 1405—15" dia. shown) • 4, 6, 8 or 12 station rings are standard, others up to 30 stations made to order • May be mounted vertically or horizontally on all types of presses or other tools requiring indexing • Operate on standard line pressures from 60-175 lbs.

Write today for new 14-page catalog covering presses, hammers, index tables and allied equipment.

AIR-HYDRAULICS

218 BELDEN ST. • JACKSON, MICHIGAN

If you write maker identify as **IEN - 13819**

NEW Precision Potentiometers at Popular Prices

☆ Minimum capacitance to ground — phenolic body and cover — glass-reinforced polyester shaft ☆ Metal-to-metal bearings at extreme end of case ☆ Totally enclosed — excludes dust — shaft length and angle changeable without opening case ☆ Good resolution — small-diameter brush touches no more than two wires ☆ Brush keyed to hub — no slip ☆ High linearity — card cemented to case which has cylindrical wall — won't age out of round — EVERY unit tested for linearity ☆ Very simple to gang — insulating shaft and phenolic spacers retain low capacitances of single units ☆ Stock resistance ranges from 2 ohms to 500,000 ohms in 1-2-5 sequence ☆ Wattage range 2 to 20 watts in 40 Deg. C. ambient — 3 to 25 watts in 20 Deg. C. ☆ Priced between $3.15 and $10.00.

Write for the New G-R TYPE 970 PRECISION POTENTIOMETER BULLETIN

WE SELL DIRECT — Prices are net, FOB Cambridge or West Concord, Mass.

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 · 8055 13th St. Silver Spring, Md. WASHINGTON, D.C.
920 South Michigan Ave. CHICAGO 5 · 1000 North Seward St. LOS ANGELES 38

If you write maker identify as **IEN - 13820**

JUST OFF THE ASSEMBLY LINE...

New Flow Valve

WESTINGHOUSE TYPE D PILOTAIR VALVE

Gives you reliable control of single-acting and double-acting cylinders

Gives you efficient interlocking and sequencing

Gives you a choice of hand, foot, pneumatic, mechanical or electrical operation

YOU'LL LIKE THESE FEATURES

3,125 USES. Every valve is made up from a number of sections that bolt together easily to give you any type of operation.

PRESSURE SEAL STAYS IN THE GROOVE. Completely new Westinghouse seal can't roll out of position . . . will not nick, scar or chip.

LONG LIFE, LOW MAINTENANCE. No moving metal parts rub against metal. *Valve spool floats on rubber.* Stainless steel spool and aluminum alloy body resist corrosion.

WRITE FOR MORE FACTS

or get in touch with your local Westinghouse Air Brake Co. Distributor. He's in the classified phone book under "Cylinders: Air."

Westinghouse Air Brake COMPANY
Industrial Products Division
WILMERDING PENNSYLVANIA

Pneumatic cylinders, valves, engineered pneumatic systems and air control devices of all kinds.

Factory Branch: Emeryville, Calif. Distributors throughout the United States. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 01021**

CLAMPS . . Jig and fixture components such as spherical washers, swing bolts, hand cams and knobs, fixture keys, T-nuts, studs, complete clamp assemblies. Full-size drawings in 86-page Catalog 10, copyright 1951, just released. Lodding Inc., 79 Beacon St., Dept. IEN, Worcester 1, Mass.

If you write maker identify as **IEN - 01022**

CLAMPS . . C-clamps, set-up blocks, jig and fixture components, fixture locks, handles, and knobs, chucks, vises. Pocket Catalog 254, 56 pages. Reid Tool Supply Co., 332 W. Delano, Dept. IEN, Muskegon Heights, Mich.

If you write maker identify as **IEN - 01023**

CONTACTORS . . Solenoid contactors for 24-volt service to handle currents maximum at 250 amperes. Dimensions, coil and contact data in 8-page Bulletin SC-9. Guardian Electric Mfg. Co., 1621 W. Walnut St., Dept. IEN, Chicago 12, Ill.

If you write maker identify as **IEN - 01024**

CONVEYING . . Sixty-eight pages of information on screw conveyors in Engineering Data Book ID-541 covers dimensions on screws, hangers, bearings, troughs along with selection tables, capacity charts by materials handled. Continental Gin Co., 4500 S. 5th Ave., Dept. IEN, Birmingham 2, Ala.

If you write maker identify as **IEN - 01025**

CONVEYING★ . . Roller and wheel-type gravity conveyors, belt and live-roller power conveyors, switches, stands, accessories. Catalog 54, 40 pages. Metzgar Conveyor Co., 417 Douglas St., Dept. IEN, Grand Rapids 4, Mich. ★Your company letterhead required to obtain this literature. The manufacturer will service direct inquiries only.

If you write maker identify as **IEN - 01026**

DOORS . . Automatic-operating factory door consists of frame, door, hardware in place and motor operator. Pull cords, pushbutton switch, photocell or floor plate can actuate it. Bulletin, "Prest-O-Matic Door Units," 8 pages. Clark Door Co., 515 Hunterdon St., Dept. IEN, Newark 8, N. J.

If you write maker identify as **IEN - 01027**

V-BELT DRIVES . . Selection tables are a feature of 96-page Catalog 197 on Sure-Grip V-belt drives. Information covers stock drives, how to design other drives, hp. ratings, sheaves and pulleys, belts of several types. T. B. Woods' Sons Co., Dept. IEN, Chambersburg, Pa.

If you write maker identify as **IEN - 01028**

VARIABLE SPEED DRIVE . . Variable-delivery hydraulic pump for straight-line or rotary drive to 3 hp. Bulletin 47010, 8 pages, has application circuits. Oilgear Co., 1567-A W. Pierce St., Dept. IEN, Milwaukee 4, Wis.

If you write maker identify as **IEN - 01029**

ENGINEERING . . Product design to production is the scope of the company's engineering service. Three examples of work is has done are in "Con-Tour" for October, 4 pages. One is a research testing unit for O-rings. Continental Tooling Service, 19 W. 4th St., Dept. IEN, Dayton 2, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13822**

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

THIS NEW RESIN SANDER DISC

handles toughest sanding jobs faster... lasts longer... stays sharper

Sharp, fast-cutting aluminum oxide abrasive grain, a resin bond engineered for greater holding power, and a tougher, all-fibre backing is the secret of the new Resin Sander Disc just announced by CARBORUNDUM. This new disc is designed for both snagging and surfacing operations, resisting both edge-wear and the heat of flat contact grinding.

Try a new CARBORUNDUM Resin Sander Disc on the toughest job in your shop—such as exceedingly rough and scale-encrusted welds. See how it beats any other disc for cutting ability, long life, and uniformity. Notice how the edge holds its shape longer, and how the abrasive grain stands up under the most severe grinding conditions.

New Resin Sander Discs are available in 16 through 150 grit in a range of sizes and types to fit all Disc Sanders. The most common diameters of 7" and 9⅛" are always in stock and easily identified by the green back. Packing in moisture-resistant boxes keeps them "factory-fresh," makes handling and storage easier.

FOR A FREE DEMONSTRATION, call your CARBORUNDUM Distributor or Salesman (listed in the yellow pages under "Abrasives" or "Grinding Wheels"). Or, if you prefer, use the inquiry card provided by this publication; or write **The Carborundum Company,** Dept. IEN 82-418, Niagara Falls, New York.

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York.

82-418

If you write maker identify as **IEN - 13823**

NEW! Rapistan® SEALED CASTER

at ⅓ less cost than ordinary non-sealed casters!

5200 Series Rapistan Sealed Caster with 6" Sealed MB Demountable Wheel.

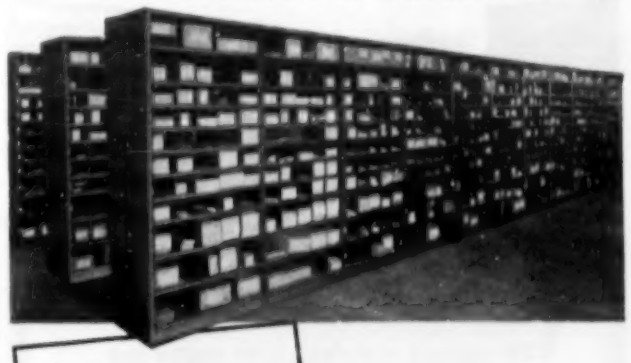
Now, for the first time, this revolutionary Rapistan development gives you a heavy-duty cold-forged *sealed* caster at *⅓ less cost than ordinary leading non-sealed casters!* Save in longer caster life, improved performance, lower maintenance. Dirt, acids, alkalis, brines, other chemicals are *sealed out* of coin-hardened raceways. Ask your Rapistan distributor to show you the comparative service chart, or write direct.

YOURS FREE! *Write for handbook describing Rapistan sealed casters.*

The RAPIDS-STANDARD COMPANY, Inc.
232 Rapistan Building • Grand Rapids 2, Michigan

Rapistan® FASTEST GROWING NAME IN CASTERS

If you write maker identify as **IEN - 13824**

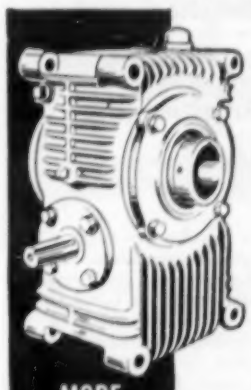


FREE LAYOUT SERVICE for all storage needs

Trained Equipto engineers will lay out your storage facilities . . . suggest the number and types of units you will need . . . assure maximum use of every inch of floor space . . . increase working efficiency by expert arrangement of units. Take advantage of this free service. Ask our engineer to call, or write for catalog on complete line.

Equipto DIVISION OF AURORA EQUIPMENT CO.
655 Prairie Ave., Aurora, Illinois
Steel Shelving . . . Parts Bins . . . Drawer Units

If you write maker identify as **IEN - 13825**



ANNOUNCING CONE-DRIVE SHAFT MOUNTED SPEED REDUCERS

MORE HP PER POUND • MORE HP PER CUBIC INCH • MORE HP PER DOLLAR

Here's a versatile new member of the Cone-Drive line. It's the only speed reducer that provides all the features of the double-enveloping worm gear design plus the many advantages of shaft mounting.

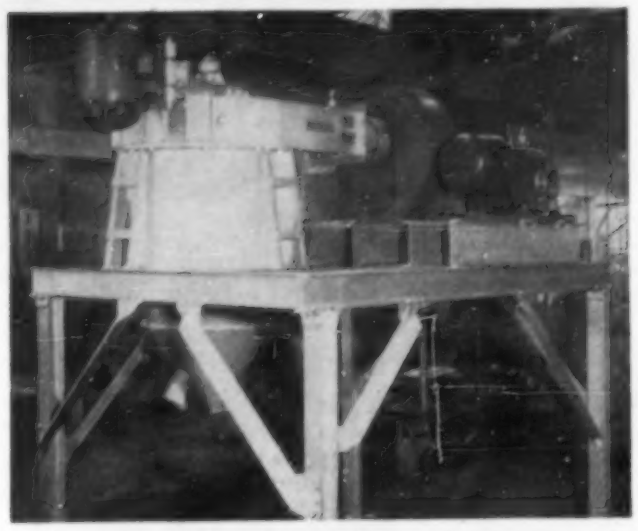
These new reducers can be readily motorized, too. A simple bell housing is available to accommodate standard NEMA C-type flanged motors without using expensive couplings.

Standard reduction ratios range from 5:1 to 60:1. Bore sizes accommodate shafts from 1" to 2½". All sizes are available from stock.

Complete engineering details in Bulletin CD-323. Ask for it.

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Dawson Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as **IEN - 13826**



New Type STURTEVANT Air Separator

Recovers Fines in Micron Ranges

Now the famous Sturtevant Whirlwind Air Separator, so widely used throughout industry for fast recovery of fines, has been specially designed to "pick-off" classified materials such as pigments, limestone fillers, plastics, oyster shells, etc., in micron sizes.

These highly efficient air separators select a continuously uniform product of desired fineness. Used in a closed circuit with grinding mills, they increase production, cut power costs.

Large feed opening, rugged construction, ease of adjustment, low power consumption assure economy of operation and minimum upkeep. Write for further information.

STURTEVANT
MILL COMPANY
113 Clayton St., Boston 22, Mass.

If you write maker identify as **IEN - 13827**

HOW TO SAVE MONEY ON

STEEL SHELVING

The real cost of shelving is the erected cost

That's why highest quality DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts*, uses *80% less bolts* and is the *only shelving* available that is *100% adjustable*. It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

Write for a free catalog now, while your mind is on shelving.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

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For over 25 Years Manufacturers of.
Storage Shelving • Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as **IEN - 13828**

WE CARRY COMPLETE

BAR STOCKS

- cold finished carbon
- hot rolled alloy
- cold finished alloy
- stainless

• All our warehouses carry a wide range of types, sizes and grades of steel bars. And you can always count on consistent high quality with the bars we carry. Why not simplify your buying by ordering *all* your bar stock from a single dependable source . . . U. S. Steel Supply?

WRITE FOR FREE BOOKLETS NOW

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Please send me, without obligation, descriptive literature on the following types of bars:

☐ carbon C.F. ☐ alloy H.R. ☐ alloy C.F. ☐ stainless

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NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 01030**

FASTENINGS . . Flanged eyelets in hundreds of sizes are listed by dimensions in 32-page Bulletin BG-1. Stock sizes are indicated. Setting tools are illustrated. American Brass Co., 696 S. Main St., Dept. IEN, Waterbury 20, Conn.

If you write maker identify as **IEN - 01031**

FASTENINGS . . Bolt anchors, screw anchors, expansion bolts, toggle bolts, installations tools. List prices are included in 12-page Catalog 54. Rawlplug Co., 271 Church St., Dept. IEN, New York 13, N. Y.

If you write maker identify as **IEN - 01032**

FASTENINGS . . Socket-head cap screws and set screws, flat-head and button-head screws, pipe plugs, socket keys, dowel pins. Catalog 877-4, 32 pages, stresses advantages of using standard fasteners instead of specials. Standard Pressed Steel Co., Box 555, Dept. IEN, Jenkintown, Pa.

If you write maker identify as **IEN - 01033**

FILTERING . . Hilco oil filters for hydraulic lines and equipment is the subject of 8-page Bulletin F-132. Drawings illustrate installation methods. Sizes are listed. Hilliard Corp., 35 W. Fourth St., Dept. IEN, Elmira, N. Y.

If you write maker identify as **IEN - 01034**

FLOOR GRATING . . Welded, riveted, serrated, heavy-duty types are made to meet your requirements. "Gary Grating," 4 pages. Standard Steel Spring Div., Rockwell Spring and Axle Co., 4000 E. 7th Ave., Dept. IEN, Gary, Ind.

If you write maker identify as **IEN - 01035**

GAGES★ . . "Mahr" line of precision gear-testing instruments, and methods for their use, in new 100-page book. George Scherr Co., 200 Lafayette St., Dept. IEN, New York 12, N. Y. ★Your company letterhead and title required to obtain this literature. The maker will service direct inquiries only.

If you write maker identify as **IEN - 01036**

GENERATORS . . Engine-generator sets, 50 to 350 kw., custom built to run on natural gas, LPG, gasoline, sludge gas. Bulletin G-6, 8 pages. Le Roi Div., Westinghouse Air Brake Co., 1706 S. 68th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as **IEN - 01037**

GLASS YARN . . Continuous-filament Fiber-Glass yarns for weaving, plastic reinforcement, coated-fabric service. Bulletin FTY-1, 8 pages. Libbey-Owens-Ford Glass Co., 1047 Nicholas Bldg., Dept. IEN, Toledo 3, Ohio

If you write maker identify as **IEN - 01038**

GRINDING MACHINES . . Condensed information on a line of tool grinding machines, abrasive-belt machines, polishing lathes, general-purpose grinding machines, dust collectors. Catalog 80, 12 pages. Hammond Machinery Builders Inc., 1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13829**

You can *see* why Magcoa truck Dockboards perform better . . .

Look underneath to see another Magcoa feature that insures better performance, longer Dockboard life on your truck dock: the 7½-inch safety angle. It fits snug in the narrow gap which results when you back into the dock and set your brakes; no need to move truck or trailer a second time. Regardless of abuse, the Magcoa safety angle holds up, won't crush or break. Spindly channel sections and other fragile locking devices can't take this kind of rough treatment.

The whole story is told in a new bulletin, "Look Into *And Under* Magcoa Dockboards." Write today for your free copy.

LOOK UNDERNEATH!
You will see the ⅜"x7½" Magcoa safety angle. It extends the full width of the Dockboard and is welded on all 4 sides—in this case, 124 inches of continuous precision welding.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as **IEN - 13830**

NOW . . . More Speed At Lower Cost

HOBBS Automatic Production Cutter

Electronic measuring and precise controls give you accurate, automatic, low-cost operation!

Easily handles paper, plastic, cloth, etc. up to 60" wide from extruders, laminators, "in-process" operations, or from rolls and sheets. Feeds, controls, measures and cuts soft "in-process" materials to uniform sheet sizes. Process rate is 10 to 100 feet per minute, depending on length of cut. Material can be accurately slit and cut in one operation, with added slitting attachment. Special feeding and take-away devices available for any production set-up. Get the facts on this new machine—estimate your immediate savings. Write *now* for details.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 5, Mass.
EST. 1883
New York Office: 132 Nassau Street
Chicago office: 549 West Washington Blvd.

Manufacturers of Modern Converting Machinery

If you write maker identify as **IEN - 13831**

LIGHT
BUT SO STRONG!

TOTELINE FIBERGLASS TRAYS

For Drying:
CHEMICALS
PHARMACEUTICALS
ANTIBIOTICS

They're feather-light, but they're durable and sturdy as any trays you've ever used! What's more, the large inside corner radii makes them very easy to clean. And, because fiberglass does not absorb heat, the materials dry faster in Toteline trays. Many sizes available. Write

TOTELINE Wherever materials are handled

MOLDED FIBERGLASS TRAY CO.
World's largest producer of Fiberglass reinforced resin Trays, Tote Boxes
LINESVILLE, PENNSYLVANIA

If you write maker identify as **IEN - 13832**

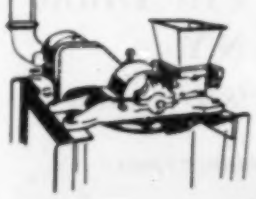
A Complete Package
Sized to your Job

Precision Grinding—Smooth Blending
Clean, Cool Air Conveying
Optimum Dust Collection—
All Unified In a Single MIKRO System

In this complete MIKRO "package"—combining MIKRO-PULVERIZER (or MIKRO-ATOMIZER), MIKRO-AIRACON and MIKRO-COLLECTOR—three separate functions—pulverizing, air conveying and dust collection, are welded into a coordinated and completely automatic processing system which eliminates the cost of manual handling.

The service and facilities of the MIKRO Laboratory are at your disposal, without obligation, to help obtain the best answer for you.

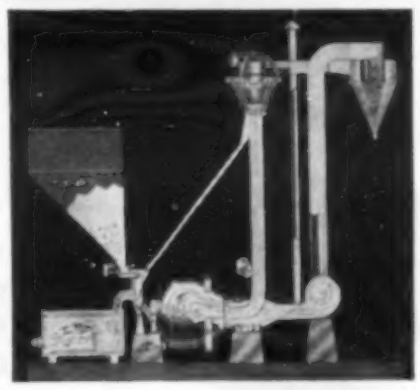
Write for illustrated descriptive literature.



MIKRO
PULVERIZING MACHINERY DIVISION
METALS DISINTEGRATING COMPANY, INC.
42 Chatham Road Summit, New Jersey
PULVERIZING • AIRCONVEYING • DUSTCOLLECTION EQUIPMENT

If you write maker identify as IEN - 13833

It DRIES while it GRINDS while it CLASSIFIES



THE HARDINGE "THERMOMILL"

The Hardinge *"Thermomill"* is an ingenious combination of Conical Mill, "Gyrotor" air classification system and air preheater. It dries, grinds and classifies—in a single system—materials carrying an appreciable amount of surface moisture, reducing them to dry, finely-ground products. Write for Bulletin 17-B-38.

HARDINGE COMPANY, INCORPORATED

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If you write maker identify as IEN - 13834

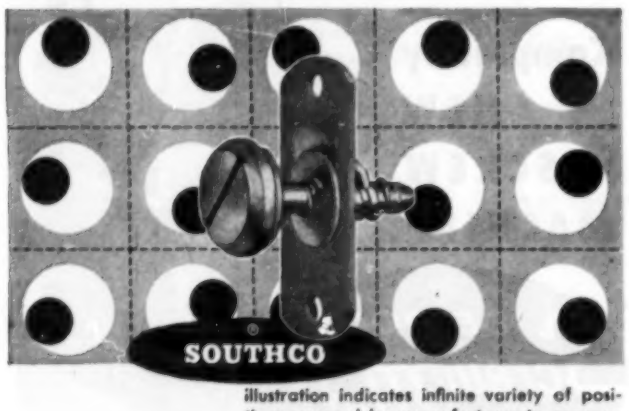
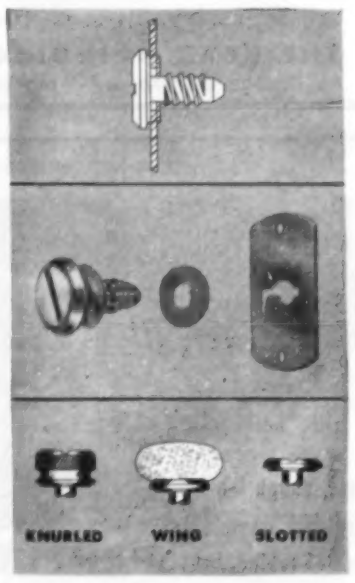


illustration indicates infinite variety of positions assumed by screw fastener to compensate for misalignment.

a quick release fastener that...

solves alignment problems

"FLOATING SCREW" ASSEMBLY COMPENSATES FOR OUT-OF-LINE DOORS AND PANELS



Installation of access doors and panels is made easy and production is speeded with Southco Quick-Release Fasteners. The wide alignment tolerances of Southco's "Floating Screw" adjust automatically to misalignment, saving mechanics' time. Also, the Southco "Floating Screw" insures accurate and uniform closure throughout the life of the equipment, compensating for warpage and bends resulting from hard usage.

One Southco grip length can meet most panel thicknesses on the average assembly—no need to specify many fastener sizes!

For complete information, write Southco Division, South Chester Corporation, 241 Industrial Highway, Lester, Pa.

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SOUTHCO FASTENERS

PAWL, SCREW AND SPRING · DRIVE RIVETS ANCHOR NUTS · ENGINEERED SPECIALTIES

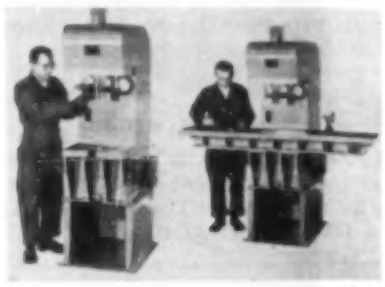
OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as IEN - 13836

Press - Self contained hydraulic rates 5 to 150 ton, 10 to 30-in. stroke

Source: STANLEY H. HOLMES COMPANY
3300 W. Lake St., Dept. IEN, Chicago 24, Ill.



Ask for "Specifications Manual"

Assembling, bending, broaching, burnishing, forcing, forming, nibbling, punching, slotting, staking, stamping, straightening are typical operations for which this new press can be employed as a general utility unit. It is available in eleven ratings between 5 and 150 ton. Throat dimension ranges from 8 to 20 inches. Maximum distance, ram to table, measures 15 to 40 inches.

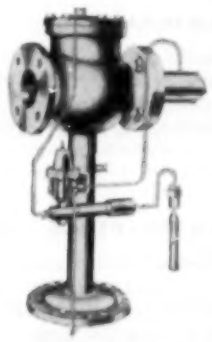
A straightening table can be applied or removed. It is shown to the right in the illustration. Two lengths are 72 and 120 inches. Ram speed, downward, is 61 to 132 ipm., based on the pump motor operating at 1,200 rpm. Return is at 48 to 259 ipm. Operation can be specified with a separate fast approach and downward feed stroke and fast return.

The pump and its driving motor are mounted on a hinged panel that forms the back face of the housing. The pump is connected by hydraulic hose to a steel manifold plate containing oil passages leading to the valve and control equipment mounted on O-ring gaskets on the plate. The plate itself, with the valves assembled, can be removed and replaced quickly to minimize down time when overhaul is required. Complete specifications and detailed illustrated description of the press are contained in a specifications manual.

If you write maker identify as IEN - 13837

Valve - Combination regulator controls pressure, limits temperature

Source: KLIPFEL VALVES INC.
1000 Weller Ave., Dept. IEN, Hamilton, Ohio



Valve No. 1649

Down stream pressure is sensed by one of two pilots that apply in combination with this new temperature and pressure regulator. The pressure pilot opens and closes the valve to maintain a predetermined pressure at the same time the action is supplemented by the temperature control pilot which sure at the same time, the accloses the main valve when the temperature control point is reached regardless of the down stream pressure at the moment. The main valve opens and the pressure reducing function is resumed when the control temperature falls below the set point.

Pressure range is 5 to 125 pounds. Temperature adjustment range is maximum at 50 deg. F. in a minimum setting between 25 and 75 deg. F. and a maximum setting from 225 to 275 deg. F. The valve is available with a semi-steel body in 2-in. and larger sizes. Smaller sizes are fitting with bronze bodies. Stainless steel trim is used in 4 in. and smaller sizes. The larger sizes have bronze trim but can be specified with stainless. Eight feet of capillary tube and a nickle plated bulb are standard equipment.

If you write maker identify as IEN - 13838

Electric Duct - Rolling trolley for Feedrail "375" trolley busway

Source: FEEDRAIL CORPORATION
125 Barclay St., Dept. IEN, New York 7, N. Y.

Rates 200 hp. at 440 volt ac.

Two and three pole construction are both available in new heavy duty trolleys rating 375 amperes. Both will handle electrical loads to 200 hp. and ride in the "375" Feedrail track.

Construction includes a heavy gage metal frame, sealed ball bearing support wheels to carry the weight along the track runway, horizontal guide wheels, riding in the slot in the bottom of the track, to prevent slewing and undercarriage wheels to prevent upward thrust. Brush type contacts, six per pole, are made of silver alloy. The brushes are spring loaded to maintain contact brusher and alignment with the busbars in the track.

The trolley is put in service after connecting the load line to the solderless type pressure connectors in the steel terminal box. A mechanical polarizing stop prevents improper insertion into the track. Cable grips prevent strain on the terminals. A pantograph type of linkage is provided to connect the trolley to the powered equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13839

BROWNHOIST BETTER
● BUY DIRECT FACTORY
● ROPE REEVE, LINK TYPE
● WRITE FOR CATALOG

BUILDS BUCKETS FROM FOR LESS POWER WHEEL

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN - 13840

get all the facts about MUELLER BRASS CO. 600 series bearing alloys

in this new detailed engineering handbook . . . write for your copy today

MUELLER BRASS CO., PORT HURON 26, MICH.

132

If you write maker identify as IEN - 13841

KELLER AIR MOTORS

● Compact design with high power-to-weight ratio. Enclosed construction.

● Efficient with either high or low air pressure.

● Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.

● ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 13842

For HIGHEST ELECTRICAL & MECHANICAL Efficiency!

New JONES 2400 SERIES PLUGS & SOCKETS

Improved Socket Contacts Four individual flexing surfaces. Positive contact over practically their entire length.

Both Plug and Socket Contacts mounted in recessed pockets greatly increasing leakage distance, INCREASING VOLTAGE RATING.

Plug and Socket contacts cadmium plated. Add to appearance of your equipment.

Interchangeable with Jones 400 Series.

Ask for Catalog 20, Complete line Jones Plugs, Sockets, Terminal Strips

P-2406-CCT Plug—with cable clamp in top

S-2406-SB Socket with shallow bracket for flush mounting

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED CARR FASTENER CORP.

If you write maker identify as IEN - 13843

Abart GEARS

CUSTOM-MADE
precision-cut to your order

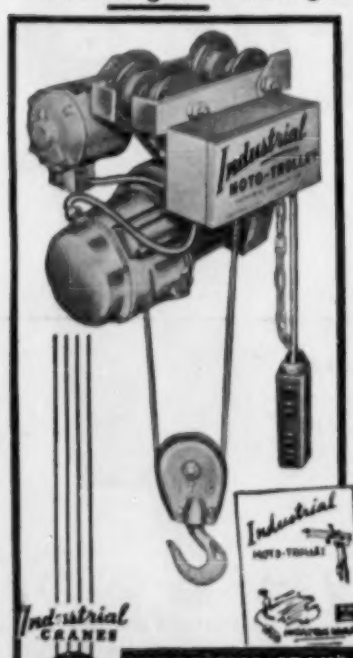
Abart means fine quality gears . . . in a wide variety of types and sizes . . . all cut to your exact specifications. No stocks are maintained! Abart gears are custom-made in steel, brass, bronze, cast iron, any metal and non-metallic gear material. Precision is assured by Abart finishing equipment which permits shaving gears in pitches from 64 D. P. to 5/7 D. P. Complete Abart facilities assure prompt service, right price—in any quantity.

Send B/P and specifications or samples for quotation. Specify material and nature of work.

ABART GEAR and MACHINE CO.
4823 WEST 16TH STREET • CHICAGO 50, ILLINOIS
Manufacturers of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 13844

Industrial MOTO-TROLLEY
The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
1521 SOUTH PAULINA STREET CHICAGO 8, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

NEW LITERATURE—Continued

If you write maker identify as IEN - 01039

GRINDING TOOLS . . Portable pneumatic tools include grinders, sanders, drills, hammers, impact wrenches. Models and accessories in 56-page Bulletin 38-A. Rotor Tool Co., 26300 Lakeland Blvd., Dept. IEN, Cleveland 23, Ohio

If you write maker identify as IEN - 01040

GRINDING WHEELS . . Diamond wheels to sharpen carbide tools, cut hard materials, also diamond wheel dressers. Catalog 55, 44 pages, gives list prices. Action Diamond Tool Co., 4545 W. Grand Ave., Dept. IEN, Chicago 39, Ill.

If you write maker identify as IEN - 01041

GRINDING WHEELS . . Pocket booklet A-1146, 52 pages. presents abrasive products such as grinding wheels, coated paper and discs, belts, rolls, sleeves. Carborundum Co., 1942 Buffalo Ave., Dept. IEN, Niagara Falls, N. Y.

If you write maker identify as IEN - 01042

GRINDING WHEEL DRESSERS . . Abrasive and toothed-wheel types for production grinding machines are illustrated with condensed specifications in 16-sheet catalog, "Place Wheel Truers." Abrasive Truing Tool Corp., 1100 E. Washington St., Dept. IEN, Freeland, Mich.

If you write maker identify as IEN - 01043

GRINDING WHEEL DRESSERS . . Mechanical, abrasive and diamond dressers are described in detail by new 24-page Catalog 75, along with dressers for coated abrasive belts. Desmond-Stephan Mfg. Co., Dept. IEN, Urbana, Ohio

If you write maker identify as IEN - 01044

GROMMETS . . Size tables with dimension drawings on grommets made of rubber, synthetic rubber, silicone rubber. "Grommet Catalog," 12 sheets, includes the standard AN-931 grommet series. Goshen Rubber Co., Dept. IEN, Goshen, Ind.

If you write maker identify as IEN - 01045

HANDLES . . Standard designs made of wire, formed to shape, also retainer clips. Twenty-page catalog, "Wire Handles," shows rectangular, oblong, half-round and other types with notes on wire size range. E. H. Titchener & Co., 67 Clinton St., Dept. IEN, Binghamton, N. Y.

If you write maker identify as IEN - 01046

HANDLING . . Seald-Bin is a collapsible rubber container for flowable liquids and solids. It can be used to handle, ship or store. It is deflated for return and re-use. Bulletin CP-70, 16 pages, covers the 70-cu. ft. size. U. S. Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y.

If you write maker identify as IEN - 01047

SHOCK INSULATING . . Surge arrestor for pipe lines is based on a welded stainless-steel bellows filled with nitrogen inside a closed container. "Pressurized Hydropads," 4 pages. Cook Electric Co., MagniLastic Div., 2700 N. Southport Ave., Dept. IEN, Chicago 14, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13845

WOMEN WORK WELL WITH RAYTHEON WELDPOWER® WELDERS

Says BOMAC LABORATORIES, Beverly, Mass.

In selecting Raytheon WELDPOWER units exclusively for production welding parts for Hydrogen Thyratron tubes, Bomac Laboratories chose Raytheon WELDPOWER because:

- Unskilled women operators learn to make acceptable welds in a matter of hours.
- Oxides and annealing caused by welding are eliminated.
- Maintenance and interchange of electrodes are easily accomplished.

Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units and Welding Heads. Available in a range of sizes.

Send sample parts or write for details to Dept. 6120-IN12.

RAYTHEON
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL OPERATIONS, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN - 13846

Now YOU CAN SPOT WELD STEEL FROM ONE SIDE ONLY with AIRCOSPOT®

New inert-gas-shielded water-cooled AIRCOSPOT Gun welds stainless and mild steel sheet from one side only, without jigs or back-up plates! Nine-inch-long manual Gun weighs only four pounds. Fully automatic welding cycle:—simply set controls, touch Gun to work, and pull trigger. Current, gas and water connections made through single convenient control panel. Operates on 250-amp. DC with 55-volt open circuit voltage.

Write today for free pamphlet that gives complete specifications and operating data.

AIRCO®
AIR REDUCTION
60 East 42nd Street
New York 17, N. Y.

Divisions of Air Reduction Company, Incorporated, with offices and dealers in most principal cities
Air Reduction Sales Company
Air Reduction Pacific Company
Represented Internationally by Airco Company International

If you write maker identify as IEN - 13847

Announcing Completely NEW SCREW MACHINE

DETROIT Screw Matic 750

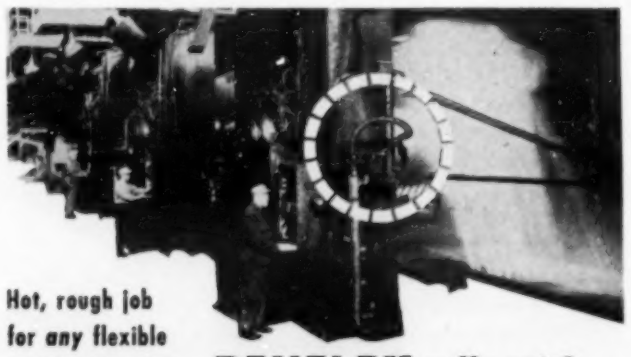
The first really new development in automatic, single spindle screw machine engineering in twenty years.

The Gear Grinding Machine Company's SCREWMATIC 750 is now ready to give you the features that mean higher production at lower costs • 5100 Standard Spindle Speed • greater precision • simplified tool and cam layout • outstanding work-length versatility • maximum tool accessibility • free chip flow • standard tool and attachment accommodation • and greater work output through variable spindle speeds.

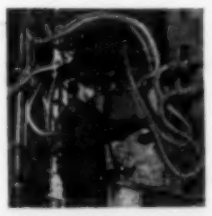
Write for Details

THE GEAR GRINDING MACHINE CO.
3923 CHRISTOPER • DETROIT 11, MICHIGAN

If you write maker identify as IEN - 13848



Hot, rough job for any flexible metal tubing, but... PENFLEX rolls with the punch for production



Write for "Flexineering", your guide in buying and using flexible metallic tubing.

When hot steel strip races through rolls at express train speeds, there's plenty of heat . . . steam . . . vibration. Water-spray and lubricating hose really get a workout.

That's why one big steel mill uses Penflex, the flexible metal tubing that's tight as a pipe but gives. Penflex Hose, Tubing and Couplings are built to resist heat, pressure (inside and outside), corrosion, abrasion, and vibration. They provide safe, tight connections and sure conveyance for liquids, semi-liquids, gases, volatiles, and granulars.

Penflex comes in a complete line of four-wall interlocking and seamless corrugated tubing, and high pressure seep-proof tubing for service where leaks are fatal. Bronze, galvanized steel, stainless, aluminum; I.D. from ⅛" to 30". Call in the Penflex engineer for design and application help.

Pennsylvania Flexible Metallic Tubing Co., Inc.
7200 Powers Lane, Phila. 42, Pa.

PENFLEX
COMBINES FLEXIBILITY WITH DURABILITY

If you write maker identify as IEN-13849

CARVER has the PUMPS... to fit your needs!

Whatever your requirements, there is a pump in CARVER'S Complete Line that will give you outstanding performance over a wide range of capacities and heads. CARVER . . . your best buy for better pumping.

CARVER PUMP CO.
1474 Hershey Ave.
Muscatine, Iowa

Ask for bulletins

CARVER
the quality name in pumps

If you write maker identify as IEN-13850

In the same size space as your watchman's cot

3450 lbs. Steam per hr.

(100-PLUS HP.)

Vapor Modulātic—a line of high- and low-pressure industrial boilers so compact that 100-hp. takes only 8' x 5' of floor space...no more than your watchman's cot! Built in 7 models —*each about 1/5 the size of a conventional boiler of the same rating.*

PROVED FOR 22 YEARS

Over 6000 in use in the tough, exacting job of supplying car-heating steam from Diesel locomotives—and now newly tailored to fit the needs of industry. Cut down boiler room size—utilize spare space. Compact Modulātic does a big-boiler job with *proved* dependability.

COMPLETE AND AUTOMATIC

Vapor Modulātic is a complete unit—light, easy to install. Complete modulating automatic controls are built-in. Needs practically no attention. Full pressure in two minutes from a cold start—no early reporting, no week-end standby. Coordinated controls for multiple installations.

Send for NEW Bulletin 586

A SIZE FOR EVERY NEED

Ratings (7 sizes).....18 to 160 hp.
Pressure range.....5 to 285 p.s.i.
Fuel.....Oil, Gas, Oil-Gas Combination
Over-all efficiency 78-82%

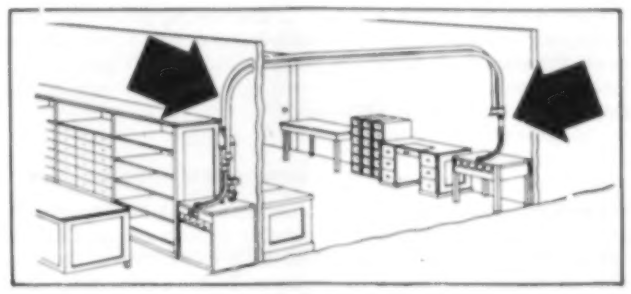
Inquiries invited from qualified distributors in unassigned territories

VAPOR HEATING CORPORATION
80 E. JACKSON BLVD., CHICAGO 4, ILL.
50 Years in Steam Generation and Controls

If you write maker identify as IEN-13852

Conveying - Pneumatic tube for user installation, two stations

Source: LAMSON CORPORATION
303 Lamson St., Dept. IEN, Syracuse 1, N. Y.



To 130 ft. between stations

Any two points, up to 130 ft. apart in an office or plant, can be connected with a new kit assembly of pneumatic tubes known as the Airtube. The stations can be on the same or different floor levels. Messages and light material are handled in air propelled carriers at a speed of 20 feet per second. Carriers can be dispatched at 10-sec. intervals.

The kit includes expanded end steel tubing, bends, terminal valves, receiving chutes, the required hardware, message carriers and a cabinet unit containing a ½-hp. motor and exhauster to create the propelling force. The exhauster has sufficient capacity to power a carrier run measuring 500 feet. The kit lists at $525.

If you write maker identify as IEN-13853

Plastic - Expandable resins to produce silicone foam structures

Source: DOW CORNING CORP.
Box 592, Dept. IEN, Midland, Mich.

Samples and data upon request

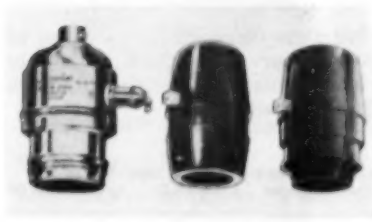
New series of ready-mixed powders contains pre-measured portions of resin, filler, blowing agent and catalyst, to be cast into sheets or blocks and made up as sandwich structures or foamed in place. The mix melts, foams and cures, when heated, without mixing or processing. Pressure exerted during expansion is negligible so light weight molds can be used and no preheating is required.

Density can be controlled between 8 and 18 lb. per cu. ft. by varying the expansion temperatures. The foam can be post cured in service. Finished foams have a uniform, spherical, uni-cellular pattern. All are stable at temperature to 700 deg. F. and have good physical and electrical properties. Cost ranges to $5 per pound.

If you write maker identify as IEN-13854

Lighting - Two-circuit lampholder with pull chain or push button action

Source: McGILL MFG. COMPANY
100 N. Lafayette St., Dept. IEN, Valparaiso, Ind.



250 watts, 250 volts

Brass or phenolic construction can be specified for this new two circuit lampholder. It can be switched for high, medium, low and off positions. Each unit includes a No. 41 Levolier switch mechanism. One of the two phenolic designs takes a shade threaded directly in position. The threads will take a harp and free the control lever from harp wires. The holder also provides an indented ring where a cage can be attached to provide a lamp guard on a non-metallic insulated assembly.

If you write maker identify as IEN-13855

Heating - Electric space unit to 4,800 watts, for portable use

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

Modern design

Illustrated is one of three new portable thermostat controlled electric space heaters with rating from 1,500 to 4,800 watts. The smallest unit operates on 110-volt input. The other two operate on 220 volts. The largest unit in the line provides 16,320 btu. rating. All are listed by Underwriters' Laboratories. Weight ranges from 7¼ to 32 pounds.

Control is by means of a built-in thermostat. The metal sheathed tubular heating element is insulated and is resistant to damage by accidental contact with metal objects or moisture. It does not oxidize.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13856

Design information—

ROLLPIN

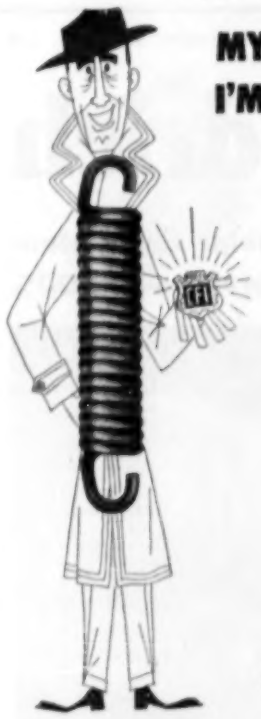
. . . the slotted tubular steel pin with chamfered ends

- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R18-1237.

If you write maker identify as IEN-13857



MY NAME'S WICKWIRE I'M A SPRING

Extension Spring, they call me. My job? Look anywhere.

You'll find me in your home . . . under the mattress and in dozens of other places. At your office . . . inside the typewriters, underneath your telephone dial. At the factory, too, keeping check on all kinds of machinery.

You've probably heard of my partners, Compression Spring and Torsion Spring. If we can help you, just call on us. You can get us by contacting either of the offices listed below.

THE COLORADO FUEL AND IRON CORPORATION
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Atlanta • Boston • Buffalo • Chicago • Detroit
New Orleans • New York • Philadelphia

WICKWIRE SPRINGS AND FORMED WIRES
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2506

If you write maker identify as IEN-13858

THIS 1/4" TUBING FUELS CATERPILLAR DIESEL ENGINES AT PRESSURES UP TO 1,700 PSI

On Caterpillar Tractor Co.'s new 150 D.B. hp "Boss of the Crawlers," diesel fuel is injected to cylinders at pressures up to 1,700 psi. So fuel injection tubing must be clean, have tremendous burst strength and resistance to fatigue. C-1008 Low Carbon Steel Tubing, made by Superior, easily meets Caterpillar's stringent specifications. Specially conditioned, drawn to order and tested to the utmost, it has a Rockwell hardness of B-65 maximum—can be upset and formed into loops and bends without excessive springback. Bore is uniform, clean and free of cracks or seams that might cause failure. This tubing—or one of our 55 other analyses—may solve *your* problem. Send for free Carbon Steel Catalog Section 30, and tell us about your tubing troubles.

All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

Superior Tube
THE BIG NAME IN SMALL TUBING

If you write maker identify as **IEN - 13859**

If you think you can't afford a paint circulating system, Here's News

● Ever say, "We can't justify an expensive, highly engineered paint spray system?" If so, you should see the new low-cost Paintmaster circulating systems perfected by Graco.

These Graco Paintmasters are air-operated, pumping paint directly from 5 or 55 gallon original containers. No messy, costly transferring . . . and *drums do not carry pressure.* Paintmasters can supply up to 8 spray guns each, in booths hundreds of feet from your supply room. First cost is unusually low, and it's an easy system to maintain.

In the sample system shown below, one Paintmaster supplies the system while one prepares the next drum for simple, instantaneous changeover.

Write for new Paintmaster Circulating System Literature.

GRACO
Paintmaster
GRAY COMPANY, INC.
Engineers & Manufacturers
121 Graco Square
MINNEAPOLIS 13, MINN.
Regional Offices:
New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as **IEN - 13860**

B.F.Goodrich

TW TIRE AND WHEEL ANALYSIS helps forge plant increase industrial tire service over 500%

THE maintenance men of a large Cleveland forge plant had a real problem on their hands. Industrial tires in heavy-duty service were "falling apart" under heavy loads after only 500 hours.

The local B. F. Goodrich man made a Tire and Wheel Analysis. As a result of his findings, new Deluxe Cushion Pressed-On tires with an oil-resisting compound were placed on a truck in regular service. Most of the trucks in this type of service have since been equipped with B. F. Goodrich oil-resisting-compound tires. Service hours have been increased more than 500%!

Pressed-On Deluxe Cushion tires are available with non-directional traction tread and in some sizes with smooth tread . . . and are made in a variety of compounds to meet any type of service condition. A special process that bonds the tread to the steel base assures positive adhesion of tread for life of the tire.

TW ANALYSIS CAN SAVE YOU MONEY

Just contact your local B. F. Goodrich retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations and make recommendations that can cut your industrial tire costs . . . reduce maintenance expense. The advice you receive will be unbiased for B. F. Goodrich makes a *complete* line of industrial tires for every type of service. A special TW Analysis is available for manufacturers of industrial equipment.

Here's a close-up of the front tire on the truck pictured above. 2688 hours of service and still rolling!

The B. F. Goodrich Company
Tire & Equipment Division
Department TW-438, Akron 18, Ohio

Please send me:
- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service out of Solid Industrial Tires"

Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 01048**

VIBRATION INSULATING . . Rubber in compression is employed in Series-5200 combination shock and vibration isolator. Four load ratings are 4 to 25 pounds. Metal parts interlock. Bulletin 541, 8 pages. Barry Corp., 1000 Pleasant St., Dept. IEN, Watertown 72, Mass.

If you write maker identify as **IEN - 01049**

JACKS . . Worm-gear unit to build into machinery to lift, adjust, position, apply pressure, singly or in a group. Capacities are 5 to 50 ton with travel from 3 to 25 inches. Catalog A-34, 8 pages, includes typical uses. Duff-Norton Mfg. Co., Box 1889, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as **IEN - 01050**

LADDERS . . Stepladders with railings and safety treads in models to 8 steps for work levels about 12 ft. off the floor. Caster-equipped units in 4-page "Roll-Ezy" folder. Arrow Products, 108 Arrow Bldg., Dept. IEN, Grand Rapids, Mich.

If you write maker identify as **IEN - 01051**

PLANT LAYOUT★ . . You place scale-size adhesive equipment silhouettes on a film grid for your layout. You can make a print directly from it. Samples in "ABC" bulletin. Repro-Templets Inc., River Rd. & Penna. Ave., Dept. IEN, Oakmont, Pa. ★Your company letterhead required to obtain this literature. The maker will service direct inquiries only.

If you write maker identify as **IEN - 01052**

LOCKS . . Door hardware for vehicles and equipment includes locks, hangers, handles, hinges and window regulators. Folder 92, 4 pages. A. L. Hansen Mfg. Co., 5051 Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

If you write maker identify as **IEN - 01053**

LUBRICATING . . Pneumatic equipment lubricates overhead-conveyor trolley wheel bearings and chain pins automatically, particularly prior to an oven or kiln. Catalog CL-849, revised edition, 6 pages, J. N. Fauver Co., 49 W. Hancock, Dept. IEN, Detroit 1, Mich.

If you write maker identify as **IEN - 01054**

MACHINING . . Contract service for machining automotive and aircraft parts is located in southwestern Michigan. Four-page folder lists equipment, shows production examples. Crescent Mfg. Co., Box 29, Dept. IEN, Allegan, Mich.

If you write maker identify as **IEN - 01055**

PERFORATED METAL . . Round, oblong, square perforations in ferrous and nonferrous metals, rigid or semi-rigid non-metals, coil or sheet, widths to 10 ft., paper thin to ¾ inch. Catalog, "Perforated Metals," 12 pages. Nortmann-Duffke Co., 2740 S. 32nd St., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as **IEN - 01056**

STAINLESS PIPE . . Seamless or welded in a range of alloys. Bulletin TB-356, 6 pages, has suggestions on how to select, methods of bending and joining, sizes, weights. Babcock & Wilcox Co., Dept. IEN, Beaver Falls, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13862**

The most revolutionary achievement in arc welding equipment in years!

Patent Pending

Dimensions: only 11" x 12" x 7½"

BREN WELD MODEL 200 AW

FIRST TRULY PORTABLE 200 AMP. OUTPUT ARC WELDER

Weighs only 65 lbs . . . Carry it to the job!

OBSOLETES ALL OTHER WELDERS OF COMPARABLE RATING

Sensational new transformer development produces far more power to pound! The BREN/WELD does work of conventional welders 4 or 5 times its size and weight . . . Actually delivers up to 250 amps at reduced duty cycle.

Simple to use, fully guaranteed, it operates on 110/220 volts AC, 50/60 cycles; handles electrodes from 3/64" to 5/32". Has adjustable arc voltage for different arc characteristics. Ideal for plant production and maintenance, for construction work, railroads, on farm or home.

List Price $169.50 F. O. B. Long Island City, N. Y.

See your dealer or write direct for details of free trial offer!

24 HOUR DELIVERY FROM STOCK!

Manufactured by BRENNEN, BUCCI & WEBER, INC. New York City

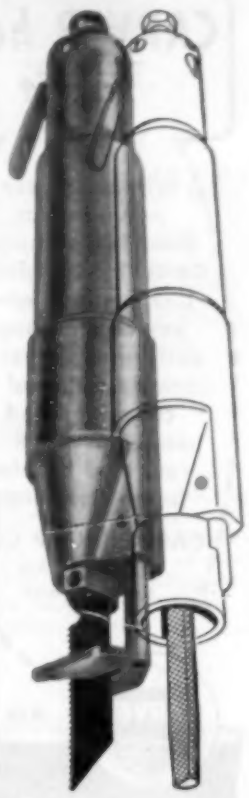
SALES DIVISION
KASSON DIE & MOTOR CORPORATION
Integrity Since 1919
32-14 NORTHERN BOULEVARD, LONG ISLAND CITY 1, N. Y.

If you write maker identify as **IEN - 13863**

NEW!

the double-duty CP Air Saw

IT CUTS AND FILES



The CP Air Saw is not an attachment . . . it's a heavy-duty production tool that takes standard blades and files. Has CONTROLLABLE POWER . . . a speed regulator enables you to select the right speed for every work condition.

A FEW OF ITS THOUSAND-AND-ONE USES
1. **In Shipping Depts.** — opening boxes and crates.
2. **In the Shop** — cutting thin gauge metal with no warpage.
3. **In the Foundry** — for deburring castings.
4. **In the Automotive field** — installing car heaters and radios.
5. **In the Electrical field** — armature undercutting, cutting coils out of motors, filing burrs from stator slots.
6. **In Plant Maintenance** — blind sawing in duct and piping work.

Chicago Pneumatic 8 E. 44th St., New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as **IEN - 13864**

DAV-SON CORK-BACKED BULLETIN BOARDS

DAV-SON indoor and outdoor style Bulletin Boards provide attractive displays for up-to-the-minute announcements and posters. Your choice of hardwood or metal frames, with or without locking glass doors, illuminated or non-illuminated.

"THE SAFETY DIRECTOR"

Flashing display is a constant warning to employees to avoid accidents. Changeable letters permit timely safety messages to be set up as often as required. Definite improvement in safety records has been noted in plants using "The Safety Director."

Write for complete information regarding DAV-SON — Cork Bulletin Boards and Directories and the famous "Safety Director."

Ask for Bulletin "A"

DAV-SON

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.

If you write maker identify as **IEN - 13865**

HOW TO CALL THE TURNS ON METALWORKING JOBS . . .

Ability to predict with a high degree of certainty the results obtainable from a cutting tool is a worthwhile asset — developed through knowledge and experience, acquired either firsthand or from other users of known repute.

It's a satisfaction to know beforehand that the tool chosen for a job will turn out well—has inherent properties that assure consistently good performance.

Foresighted metalworkers have learned to rely on Kennametal. It is noted for doing one good job after another, day in and day out, as demonstrated by scores of regularly-issued Performance Reports.

Our accumulated knowledge and experience on how to "call the turns" on a wide variety of applications is yours for the asking. Our Field Engineers will be glad to help you. Kennametal Inc., Latrobe, Pa.

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

If you write maker identify as IEN-13866

MicroRold® THINNESS CONTROL

can increase profits!

"Thinness Control" means that the decimal thickness of each sheet is uniform throughout the length and width.

Job costs are figured on a square foot basis while stainless steel is purchased on a weight basis. When stainless steel is ordered by gauge number the permissible A.I.S.I. thickness variation is plus or minus 10%. If you receive material on the heavy side of the gauge range you are paying a premium for stainless surface area. For example, if you order 18 gauge, you may receive sheets .052" thick, when a thickness of .0475" would suit your purpose. On a standard 18 gauge sheet (36" x 120") each .001" in thickness weighs 1.26 pounds per sheet. In this example, each stainless sheet could weigh as much as 5.67 pounds more than required. You can readily see the advantages of specifying stainless rolled to the light side of the gauge range. MicroRold stainless is rolled to exceptionally close tolerances, as low as 3% (plus or minus). Regular use of MicroRold provides more stainless area per ton or the equivalent area with lesser weight.

If you are not now a user of MicroRold sheet it will pay you to get the full details. Your steel distributor will gladly tell you the MicroRold story.

Washington Steel Corporation
WASHINGTON PENNSYLVANIA

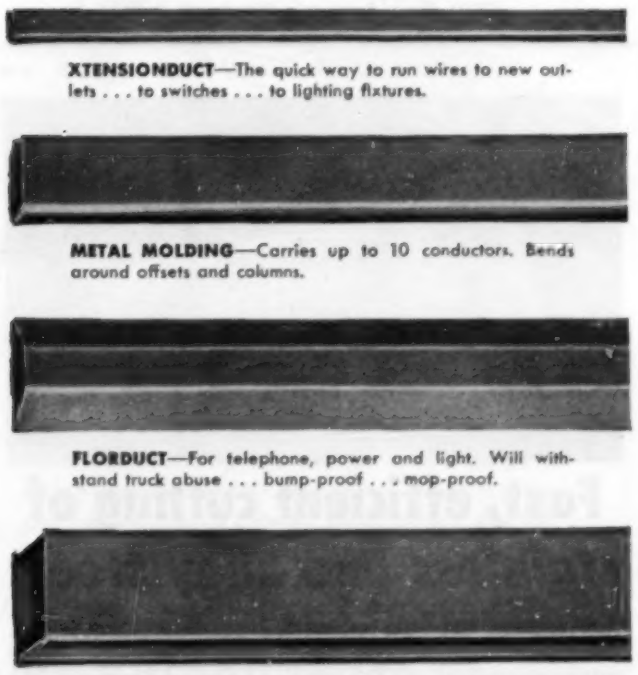
If you write maker identify as IEN-13867

Put Wiring Anywhere SAFELY

with NE RACEWAYS

Where do you need a wire? Across the ceiling . . . down the wall . . . over the floor? Put it there! It's so easy with NE all-metal Surface Raceways. Simply attach the base, lay-in the wires, snap on the capping. No fishing necessary.

Neat, strong, safe and permanent, NE Surface Raceways are inter-connectable to serve every electrical application of 15 to 60 ampere loads. Easy to install . . . easy to change. For offices, stores, institutions and industrial buildings.



XTENSIONDUCT—The quick way to run wires to new outlets . . . to switches . . . to lighting fixtures.

METAL MOLDING—Carries up to 10 conductors. Bends around offsets and columns.

FLORDUCT—For telephone, power and light. Will withstand truck abuse . . . bump-proof . . . mop-proof.

SURFACEDUCT—A complete wiring system providing all types of service up to 60 amperes.

Listed by Underwriters' Laboratories, Inc.
Write for complete details.

EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
3 Plants • 8 Warehouses • 42 Sales Offices

If you write maker identify as IEN-13869

Control - Safety panel designed to protect unattended engine

Source: STEWART-WARNER CORPORATION
1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

Minimizes maintenance

A gage for oil pressure and one for water temperature are assembled with an engine shut-off switch, an ammeter, a stop switch, reset and 14-amp. fuse on this new safety panel. It is designed for installation at an unattended engine employing battery ignition, to shut the engine down in the event of failure in the oil pressure or temperature rise to a predetermined level.

Tamper proof "stop" positions are adjustable on the two gages by turning a regulating screw at the back of each one. This adjustment locates silver contact points in the battery circuit to the engine ignition so the ignition will be cut off.

The panel is made of steel with simulated hammered aluminum finish. It measures 12 by 2⅝ by 1⅛ inches. A neoprene cover shields the stop switch and reset mechanism and fits flush with the panel front. Instruments, wiring and connections are protected.

If you write maker identify as IEN-13870

Plastic - Glass-silicone laminate made in sheets and fabricated parts

Source: SYNTHANE CORPORATION
River Road, Dept. IEN, Oaks, Pa.

Technical data upon request

Layers of woven glass fabric are combined with heat stable silicone resins in construction of the new Grade G-7 laminated sheet. The material will withstand temperature to 400 deg. F. continuously without affecting mechanical or electrical properties. Tensile strength is 23,000 lb. per square inch in lengthwise direction and 18,500 lb. crosswise. Three thicknesses are 1/32, 1/16 and 1/8 inch. Sheet width and length are to 36 inches. Fabricated parts can be supplied to specification.

If you write maker identify as IEN-13871

Transformer - Variable voltage, continuously adjustable for control uses

Source: STANDARD ELECTRICAL PRODUCTS CO.
2240 E. 3rd St., Dept. IEN, Dayton 3, Ohio

For single phase duty

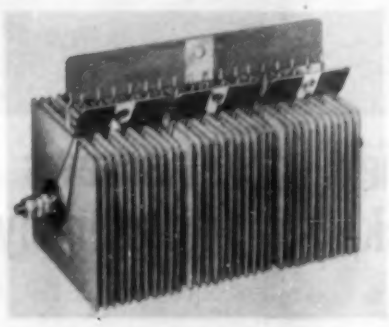
Type 100BU is a new unit in the company's line of variable transformers, previously described IEN-7928-53. The new design is intended for installation in back of a panel. Its toroidally wound coil is hydrogen annealed and is treated with the company's LoRes alloy brush track plating to prevent deterioration of the commutation surface.

Voltage is adjustable without wave from distortion. A long brush spring permits free action and maintains constant pressure during the brush life. A safety stop on the spring prevents burn out due to contact with the winding when the brush has been worn down by making it possible for the holder to contact the winding. The unit is available for 50, 100 and 150-watt loads. It can be set to deliver any output voltage from zero to the input rating.

If you write maker identify as IEN-13872

Rectifying - Selenium unit maintains rating at high temperature

Source: FANSTEEL METALLURGICAL CORP.
2202 Sheridan Road, Dept. IEN, North Chicago, Ill.



Assembled to order

Cell sizes range from 9/32 in. in diameter to 5 by 6 in. in rectangular outline in a new type of selenium rectifier capable of operating in ambient temperature to 212 deg. F. without derating. The smallest cell rates 26 or 33 volts ac. and 0.004 to 0.014 maximum amp. dc., depending on the connections and current characteristics. It can be assembled into a maximum number of 200 cells per stack.

The largest cell also rates 33 maximum volts ac. Its current rating is 4.3 to 16.1 maximum dc. amperes. It can be stacked to a maximum number of 40 cells. Voltage can be increased by connecting cells and stacks in series.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13873

THE NEW Roll-O-MATIC

ANOTHER AIR FILTER "FIRST" FROM AAF

A "dry" type viscous air filter which maintains its efficiency by automatically introducing clean AMER-*glas* filtering media from continuous roll mounted at top and re-rolling the dust laden media on spindle at bottom. Movement of filter curtain is regulated by pressure differential switch.

Under normal operating conditions, one roll of low cost AMER-*glas* is sufficient for one year's operation for 10,000 cfm of capacity. For complete information on the new ROLL-O-MATIC, call your local AAF representative or write direct for Bulletin 248.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN-13874

TAYLOR ANNOUNCES NEW "ROBOT BRAIN"

The New Taylor Flex-O-Timer* Timed Program Controller gives greater than ever precision to the timing, the sequence and duration of processing operations. It will actuate switches, turn valves, and perform many other operations involving temperature, pressure, mechanical motion, electrical energy or any combination of these . . . and perform each function in exactly the same way time after time. It is designed to automatically handle up to eight functions, either electric, pneumatic or a combination of both.

Greatest advantage of the new instrument is that direct time settings are possible. This means greater accuracy, greater speed and convenience. No computations by operators are necessary, in setting up cycles.

Write for **Catalog 98350** to find out how this new controller can help you improve quality and uniformity. Or ask your Taylor Field Engineer.

Taylor Instrument Companies, Rochester, N.Y., and Toronto, Canada.

*Reg. U.S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN-13875

NEW! HIGH PRESSURE to 500 p.s.i.

XACTO METERS

for high-pressure liquid measurement. Working parts of stainless steel and Teflon with hard-carbon bearings. Two sizes—15 g.p.m. with 1¼" connections and 50 g.p.m. with 1½" connections.

WRITE FOR BULLETIN FIG. 470

Available with straight-reading, totalizing or ticket-printing dials.

BOWSER INC.
1338 CREIGHTON AVE.
FORT WAYNE 2, INDIANA

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ATLANTA • CHICAGO • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES • NEW YORK • PITTSBURGH • SAN FRANCISCO • HAMILTON, ONTARIO

If you write maker identify as IEN - 13876

SAVE VALUABLE PLANT SPACE

High Pressure, Reverse Jet filter cleaning gives you the dust filtering service your plant requires with fewer filter tubes. No shut downs for cleaning are necessary and no section of filters are shut off periodically for rapping. Fewer filter tubes take up less plant space, installation is 50% faster and maintenance is lower. *Investigate — See what DAY High Pressure, Reverse Jet Multiple Tube Dust Filters can do for you.*

WRITE FOR BULLETIN 528-R

(Licensed By H. J. Hersey Jr.)

Reverse Jet Blow Ring travels up and down filter tube continuously. Only High Pressure, Reverse Jet Filter Cleaning gives continuous filter operation. Maximum service from minimum filter.

Self-Adjusting Blow Rings assure perfect ring to cloth contact. This DAY feature is a major improvement for higher dust filtering efficiency.

The DAY Company
813—3rd Ave. N.E., Minneapolis 13, Minn.
In Canada: The DAY Company of Canada Ltd., Ft. William, Ont.
Branch plants in Buffalo, Ft. Worth and Toronto, Ont.
Representatives in Principal Cities
DAY SINCE 1881

If you write maker identify as IEN - 13877

Buck AJUST-TRU PAT. NO. 2,439,137 CHUCKS

Only universal scroll chuck with .0005" precision — for lathes, grinders, dividing heads, screw machines.

3-jaw and 4-jaw in 4", 5", 6", 7½", 9" sizes. 3-jaw Aviation chucks, for odd-shaped parts, in 6", 7½", 9" sizes.

ALSO SUPER-GRIP 4-JAW INDEPENDENT CHUCKS FOR 9" to 16" LATHES.

LOW COST PRODUCTION
on Lathes-Grinders

Buck Ajust-Tru 7½" chuck turns bar stock and shafts to consistent precision at The Set Screw & Mfg. Co., Bartlett, Illinois.

Shop superintendents everywhere report their satisfaction with the way these universal scroll chucks cut machinists' time, line up *dead true in one* minute, hold to within .0005" re-chucking precision on duplicate parts. Some report cost savings of up to 50% per operation. The Buck chuck ends most needs for stub arbors, mandrels, special fixtures . . . adapts to lathes, screw machines, grinders, dividing heads.

Make your next chuck a Buck. It will save money every time you use it. Send for latest catalog.

BUCK TOOL COMPANY
1216 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as IEN - 13878

The All New MOBILIFT 4000 Pounder

Has *Everything* You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity at 24" Load Center
83" hydraulic mast lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse — No Clutch Pedal — No Gears to Shift — 7 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF — NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

LAMSON MOBILIFT CORP.
Home Office: Portland, Ore.
Offices in principal cities

LAMSON MOBILIFT CORP.
712 Lamson St., Syracuse 1, N. Y.
Please send complete information on ☐ 3000- and ☐ 4000-lb. capacity units to:
Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State_____

NEW LITERATURE—Continued

If you write maker identify as IEN - 01057

PIPE JOINTS . . Ball-bearing swivel fittings handle air, oil, water, hydraulic fluid at pressures to 15,000 lb. and at temperatures to 500 deg. F. Eight styles are for rotation in one to three planes. Catalog G-4, 36 pages. Chiksan Co., 330 Pomona Ave., Dept. IEN, Brea, Calif.

If you write maker identify as IEN - 01058

PIPE JOINTS . . Thirty-five designs of pipe swing joints, bronze or steel, plain or flanged, have ball bearings and O-ring seals. Catalog F-8, 12 pages. OPW Corp., 2735 Colerain Ave., Dept. IEN, Cincinnati 25, Ohio

If you write maker identify as IEN - 01059

PLASTIC FILM . . Adhesives for the company's Mylar polyester film, together with a list of companies supplying them, in 12-page Bulletin TR-2. E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

If you write maker identify as IEN - 01060

PLASTIC MATERIALS . . Sheet, rod, tube are stocked in Plexiglas, Lucite, acetate, Vinylite, polystyrene, polyethylene, nylon, Teflon, phenolic laminates. "Plastics for Industry," 24 sheets. Commercial Plastics & Supply Corp., 630 Broadway, Dept. IEN, New York 12, N. Y.

If you write maker identify as IEN - 01061

PLASTIC MATERIALS . . Plexiglas sheet is stocked by the company in clear and colors. It also stocks Lucite and Plexiglas rod, Vinylite sheet. Price List, 4 pages. Hyaline Corp., 909 N. Capitol Ave., Dept. IEN, Indianapolis 4, Ind.

If you write maker identify as IEN - 01062

PLASTIC PARTS . . Short-run production service molds thermoplastic and thermosetting materials with minimum mold cost. Figures are given for six representative parts in 8-page Bulletin F-242. Dayton Rogers Mfg. Co., 2824 13th Ave. S., Dept. IEN, Minneapolis 7, Minn.

If you write maker identify as IEN - 01063

PRESSES . . Mechanical presses in welded steel construction are straight-side tie-rod design. Sizes from 160 to 500 ton are in 8-page Bulletin 2018. Cleveland Crane & Engineering Co., 1137 E. 283rd St., Dept. IEN, Wickliffe, Ohio

If you write maker identify as IEN - 01064

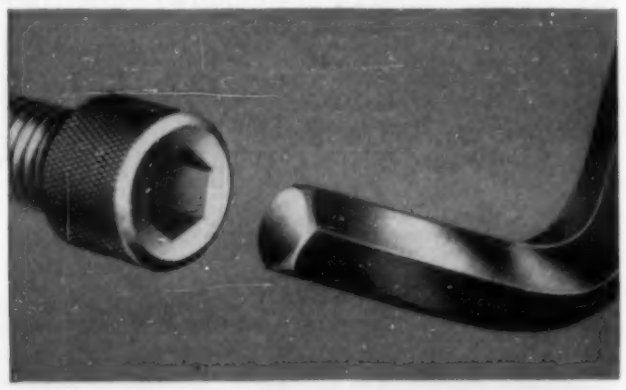
PRESS TOOLS . . Die sets with ball-bearing guide pins operate freely and maintain alignment. Catalog 7, 192 pages, gives sizes and list prices on standard and large units. Lempco Products Inc., Dunham Road, Dept. IEN, Bedford, Ohio

If you write maker identify as IEN - 01065

PUMPS . . Small bronze pumps in rotary-gear, rubber impeller and centrifugal designs. Catalog, "Bronze Pumps," 28 pages, tells which to select for a desired purpose, gives capacity tables, installation suggestions. Oberdorfer Foundries Inc., 3000 Thompson Road, Dept. IEN, Syracuse 1, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13879



Bristol's hex socket screws assure quick, strong assembly

• Easier to apply in hard-to-get-at places, Bristol's hex socket cap screws spin readily into place, fit perfectly and wrench up tightly. Stronger holding, tamper-proof, they make production and maintenance easier. Get them from your industrial distributor. Sizes 0 wire to 1" in diameter. Write for free bulletins showing applications.

BRISTOL'S SOCKET SCREWS
Hex and Multiple-Spline Socket Screws, Cap and Set
THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 13880

NEW PORTABLE
BAND SAW
Cuts metal 15 times faster than a hack saw!

Porter-Cable PORTA-BAND Model 524 $215

Portable, compact, light—take Porta-Band anywhere, use in any position. Powered for heavy duty. Eliminates fatigue—cuts costs.

Cuts thru 1½" cold roll steel in 41 secs.! That's 15 times faster than a hand hack saw . . . 2½ times faster than larger power hack saws! Handles all materials up to 3¼" dia. round, 3¼" x 4¼" rectangular.

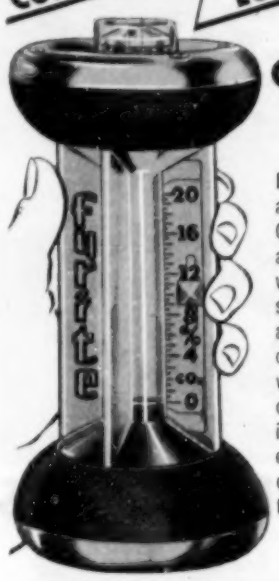
WRITE TODAY for full information

PORTER-CABLE Machine Co.
2212 N. Salina St.
Syracuse 8, N.Y.

Porter-Cable Quality Electric Tools

If you write maker identify as IEN - 13881

CONVENIENT LOW COST ACCURATE



OXYGEN and CO_2 Analysis

FYRITE Gas Analyzer shown at the left is available in two models—one for direct CO_2 analysis, the other for direct oxygen analysis. Both instruments employ the volumetric method of gas analysis involving selective absorption of CO_2 or oxygen by a chemical absorbent. A complete analysis can be made in 40 seconds. Accuracy is within one-half of one per cent CO_2 or oxygen. Absorbing fluids are furnished in individually bottled refills, and replacement of the fluid in the instrument merely requires removing the four screws that hold the cap assembly in place.

Write for Leaflet I-700

Available Individually or As A Set

FYRITE Gas Analyzers can be supplied individually—in a metal instrument chest complete with rubber aspirator, rubber and metal sampling tubing and filter, as shown at the right; or in a "Duplex Kit" which comprises both CO_2 and Oxygen Analyzers together with one complete gas sampling assembly for connecting either instrument to the desired sampling point.

BACHARACH Industrial Instrument Company
7301 Penn Avenue • Pittsburgh 8, Pa.

If you write maker identify as IEN - 13882

Fast, efficient cutting of *stainless* and *alloy steels*

You can cut stainless and other hard-to-cut steels faster, easier, better and at less cost with NCG's Ferrojet® powder cutting equipment. NCG's improved powder dispenser gives a uniformity of powder flow unsurpassed by dispensers costing two to three times more. And NCG's new Ferroflame® powder burns faster with higher heat concentration than conventional powders. Dispenser, powder and NCG's cutting and flame washing torches, plus NCG's technical assistance, make an unbeatable combination for doing a better job at less cost. Write for literature, N-150.

Copyright 1954, National Cylinder Gas Company

NCG® National Cylinder Gas Company
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as IEN-13883

....WHAT'S NEW AT BRISTOL....

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers

• **CONTINUOUS STANDARDIZATION** eliminates need for dry cells —supplies voltage that is continuously compared with standard cell.

• **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

• **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

BRISTOL THE DEPENDABLE GUIDEPOST OF INDUSTRY

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-13884

THE SIMPLE ANSWER TO ACCURATE TUBE ROLLING

IT'S A QUICK, SURE GUIDE for setting tube expanders for condenser and heat exchanger tubes. When the gage is inserted in the tube, three hardened steel balls, protruding from the hollow steel barrel, are held up against the tube wall by a spring loaded mandrel. This three point contact gives an extremely accurate measurement and the tube inside diameter is then read directly from the dial which is graduated for heat exchanger and condenser tubes. The long barrel has an adjustable stop collar which not only centers the gage but can be set for various thicknesses of tube sheets.

WRITE FOR LEAFLET Y-39
Gives complete details, including prices. Write the Elliott Company, Lagonda Division, Springfield, Ohio.

Lagonda tube cleaners and tube expanders make tube maintenance easier. Write for descriptive bulletins.

Y4-17

ELLIOTT Company

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS • CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN-13886

Dust Collecting - Cyclone unit removes dust laden air from a machine

Source: HAMMOND MACHINERY BUILDERS INC.
1607 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

Bulletin 810

Cyclone "8" is a new addition to the company's Duskolector line of cyclone type equipment to remove dust laden air and to separate out the dust at plant equipment. It applies for operations such as buffing, grinding, polishing, in connection with manufacture of wood products, plastics, glass, fiber, leather, textiles, metals.

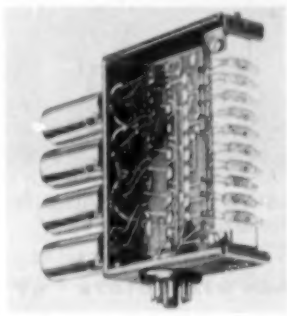
The new machine rates 2,000 cfm. Its exhaust blower, mounted on top of the housing, is driven by a 5-hp. motor. Air velocity is 5,300 fpm. through a single 8-in. inlet or two 6-in. inlets. The outlet measures 9 inches. It can be connected to three filter bags in a Model CYB-8, as shown in the illustration, or directly to outdoors in a Model CYO-8.

Overall dimensions are 29 in. in base diameter by 91 in. in height. Dust capacity of the container, mounted removably in the base, is 8.8 cubic feet. Capacity is sufficient to serve four 16 by 4-in. buffing wheels or four 4-in. abrasive belts.

If you write maker identify as IEN-13887

Counting - Plug-in decade unit has printed circuit to simplify wiring

Source: DETECTRON COMPANY
5420 Vineland Ave., Dept. IEN, N. Hollywood, Calif.



Assemblies to order

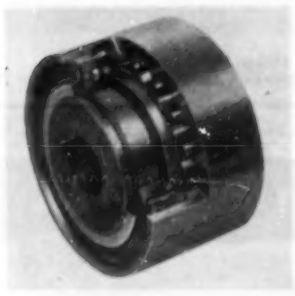
TU-100P designates a new printed circuit decade for plug-in assembly in the company's standard electronic counters, similar to the unit previously described IEN-11370-54. It is suited for use where a large numbers of pulsations are to be counted and recorded as in industrial "batch" counting, mechanical counting, time and frequency measurements.

Pulses can be recorded that are separated by 5 microseconds or more. No voltage regulation is required. Instant resetting is accomplished externally. A direct reading illuminated dial provides constant frequency rate to 100 kc. Overall dimensions are 1¾ by 5½ by 5½ in. for the new unit.

If you write maker identify as IEN-13888

Drive - One-way clutch to index, back stop, permit over-run

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



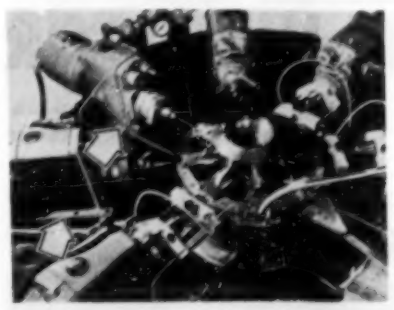
Will not overload

Three sizes in the new Series-HT line of cam clutches rate 15 to 160 ft. lb. of torque in indexing service and 30 to 320 ft. lb. in general duty. Outside diameter ranges from 2⅜ to 4¼ inches. Overall length is 2⅛ to 2¾ inches. Bore can be specified between ½ and ⅝ in. in the smallest unit and between 1 and 2 in. in the largest.

The assembly includes a single row ball bearing to maintain concentricity between the inner and outer races in addition to the action provided by the alternate cams and rolls. The user supplies a standard snap ring ball bearing to support the opposite end which is bored by the maker for this purpose. Typical applications include drive for feed rolls, spring coilers, metal forming equipment, dual drives, two-speed drives.

If you write maker identify as IEN-13889

Sliding sub-bases are now available as an accessory to the motor driven drill heads made by Rockwell Manufacturing Co., 624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa. Application of the bases makes it possible to move the drill unit heads forward or back, in relation to the main machine, without loss of alignment to assist in removal and replacement of tools when required.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13890

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN-13891

HINGED PLATEGRIP

BELT FASTENER No. 500

For Heavy Conveyor Belts of Changing Length

These heavy-duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from 3/16" to ½" thickness. They offer special advantages in mines, quarries or industrial setups where length or position of belt is frequently changed, because sections can be removed or added at will. Joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

Write for circular

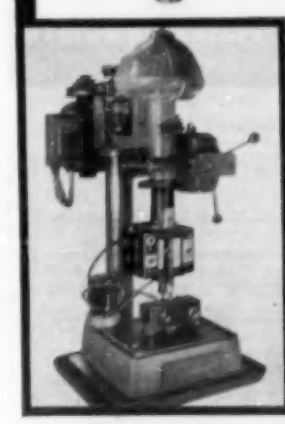
ARMSTRONG-BRAY & CO.
5180 NORTHWEST HIGHWAY CHICAGO 30

If you write maker identify as IEN-13892

Commander LEAD-MATIC *Tapper*

Automatic Tapper with Lead Screw
FOR HIGH PRODUCTION PRECISION TAPPING

- Precision Ground Lead Screws Assure Finest Threads
- Electrically Controlled Cycle or Jog Tapping Action
- Hand, Foot or Fixture Switch Control
- Easily Adapted to Any Drill Press
- Range #0 to ¾"



Built for high production tapping . . . precision or otherwise, the Commander LEad-Matic Tapper makes any drill press a precision tapping unit, even with inexperienced operators. Electric control of Cycle or Jog tapping action provides versatility to handle any job . . . automatic tap reversal eliminates drill press motor reversing and speeds tapping. Compact, ruggedly built, easy to operate, the Commander LEad-Matic Tapper will cut your tapping costs and reduce rejects to a minimum.

Write for illustrated circular and name of nearest Distributor.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO
PRODUCT OF COMMANDER . . . BUILDER OF PRODUCTION TOOLS

If you write maker identify as **IEN - 13893**

When Winter Comes—

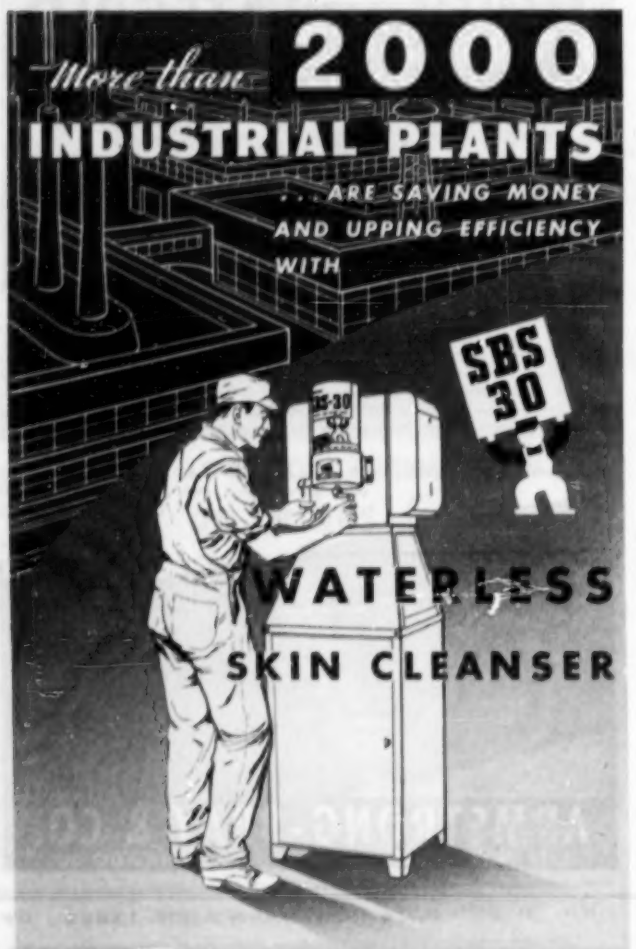
Keep Production Moving with

WING DOOR HEATERS

Cold blasts from open doors are stopped in their tracks by Wing Door Heaters, which go into action automatically when the door is opened. The high velocity curtain of warm air keeps working areas comfortable, preventing the chilly drafts from entering. Workers are healthier, happier, keep right on working when doors are open. Learn how easily Wing Door Heaters can be installed in your plant. Write today for a copy of Bulletin DH-1.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as **IEN - 13894**



You'd recognize many of them "right off the bat"—leading industrial plants that have tested, proved, ordered *and reordered* increasing quantities of SBS-30 Waterless Skin Cleanser.

Today, as you read this, more than 2000 plants are saving workers productive time . . . licking seemingly impossible skin cleansing problems . . . and vastly improving employee relations through the magic of SBS-30 Waterless Skin Cleanser.

The use of SBS-30 in our new Waterless Washstations provides cleansing facilities that require no plumbing . . . use no water . . . are 100% portable . . . actually *"bring the washroom to the worker"* . . . and lick almost every conceivable skin cleansing problem existing in industry! You owe yourself the facts . . . mail the coupon below for completely descriptive literature.

SBS—"The Washword of Industry"

SUGAR BEET PRODUCTS CO. SAGINAW, MICHIGAN
CHEMICAL BY-PRODUCTS DIVISION

Sugar Beet Products Company, Saginaw 16, Michigan

Rush literature on SBS-30 Waterless Skin Cleanser and Washstations:

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 01066**

CENTRIFUGAL PUMPS . . Horizontal and vertical designs for circulating and coolant service, ¼ to 7½ hp., heads to 160 ft., capacity to 425 gpm. Bulletin 7074-D, 20 pages, Ingersoll-Rand Co., Dept. IEN, Phillipsburg, N. J.

If you write maker identify as **IEN - 01067**

HYDRAULIC PUMPS . . Pressure booster employs two power cylinders with air or low-pressure hydraulic input, high-pressure hydraulic output to 3,360 lb. Catalog B-54, 8 pages. Petch Mfg. Co., 463 York St., Dept. IEN, Detroit 2, Mich.

If you write maker identify as **IEN - 01068**

HYDRAULIC PUMPS . . These are part of a line that includes hydraulic motors, pumps, valves, cylinders, valve and pump combinations. Pressures are to 1,000 lb. File folder, "Hydraulic Components," 8 sheets. Wisconsin Hydraulics Inc., 3165 N. 30th St., Dept. IEN, Milwaukee 16, Wis.

If you write maker identify as **IEN - 01069**

SPEED REDUCERS★ . . Herringbone and spiral bevel-helical gear reducers in single to triple designs. Selection tables on hp. ratings and dimensions in 28-page Catalog 120. Brad Foote Gear Works Inc., 1309 S. Cicero Ave., Dept. IEN, Cicero 50, Ill. ★Your company letterhead required to obtain this literature. The manufacturer will service direct inquiries only.

If you write maker identify as **IEN - 01070**

SPEED REDUCERS . . Worm-type gearmotors for horizontal or vertical drive are rated from ⅛ to 30 hp. with speed ratio from 5.66:1 to 100:1. Selection data and list prices in 68-page Catalog 46-C. D. O. James Gear Mfg. Co., 1140 W. Monroe St., Dept. IEN, Chicago 7, Ill.

If you write maker identify as **IEN - 01071**

REFRIGERATING★ . . Atmospheric spray cooling towers for refrigeration and air-conditioning applications. Bulletin 312, 12 pages, gives capacity and selection data on a standard line. Binks Mfg. Co., 3122 Carroll Ave., Dept. IEN, Chicago 12, Ill. ★Your company letterhead required to obtain this literature. The manufacturer will service direct inquiries only.

If you write maker identify as **IEN - 01072**

RUBBER PRODUCTS . . Molded, extruded, calendered, bonded rubber parts are made in a variety of compounds. Looseleaf Catalog, 26 pages, also covers hose, gloves, clothes, belts. Yale Rubber Mfg. Co., Dept. IEN, Sandusky, Mich.

If you write maker identify as **IEN - 01073**

SAWING MACHINE . . Metal-cutting horizontal band saw has capacity for 10-in. rounds and 18-in. flats in Model J, 5-in. rounds and 10-in. flats in Model B. Bulletin, "Band Saws," 4 pages. Johnson Mfg. Co., Dept. IEN, Albion, Mich.

If you write maker identify as **IEN - 01074**

SAWING MACHINE . . Metal-cutting horizontal band saw in four models with capacity from 6 to 12-in. rounds and 10 to 24-in. flats. Bulletin 54, 8 pages. Kalamazoo Tank & Silo Co., 508 Harrison St., Dept. IEN, Kalamazoo, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13896**

NEW COMPACT POWERFUL

ELECTRIC VIBRATOR

To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 13897**

This Abrasive Belt Grinder

increased production 200%!

● Time and time again, in hundreds of plants, Engelberg BG8 Abrasive-Belt Grinders have greatly speeded up operations previously performed on lathes, milling machines and ordinary grinders.

For example, the rim of the metal box shown above was originally milled for a close-fitting, watertight cap at the rate of 33 per hr. Output with a BG8 Grinder is now 99 per hr. This is only one of the documented case histories described in our free Abrasive-Belt Grinder booklet. Send for your copy today. Better yet, send samples of your machined pieces for our analysis. No obligation.

ENGELBERG

THE ENGELBERG HULLER CO., INC.
152 Seneca Street
Syracuse, N. Y.

Manufacturers of Porter-Cable Abrasive-Belt Grinders

If you write maker identify as **IEN - 13898**

SAVE MONEY

SAVE SPACE

use HEINEMANN circuit breaker *SAFETY SWITCHES*

Less than half the space is required for HEINEMANN Safety Switches . . . as compared with similarly rated fuse equipment. And, you'll find costs are surprisingly low.

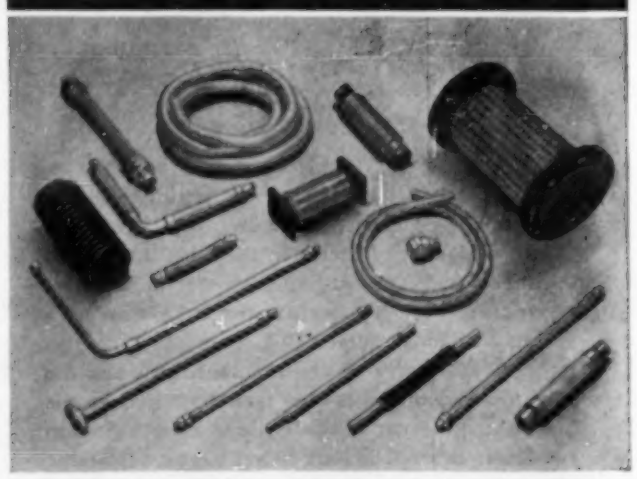
Moreover, with Heinemann circuit breakers you have continuous use of the full rated capacity of the circuit. There is no de-rating necessary. No need for costly over-sized switches. No more fuse changing. No unnecessary stoppages or delays in restoring service. Available in 70 or 100 ampere ratings.

SEND FOR BULLETIN 1411

HEINEMANN ELECTRIC COMPANY
150 Plum Street, Trenton 2, N. J.

If you write maker identify as **IEN - 13899**

Metal hose variety!



Consult PACKLESS on your flexible metal hose requirements — a complete line stocked for every industrial need — Bronze, Stainless steel and Carbon steel available for high or low temperature usage. Fittings are soldered, brazed, welded, or mechanically applied. Write for industrial folder.

PACKLESS METAL HOSE INC.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as **IEN - 13900**

How cost-wise buyers rate

STANDARD STOCK
BALL BEARINGS

GOOD BETTER ✓ BOSTON *Gear*

BALL BEARINGS
Radial • Thrust • Combination
Single Row • Double Row
—for Speeds up to 5000 RPM

IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write . . . Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as **IEN - 13901**

Send for this

FREE HANDBOOK

It will help you plan

MONEY-SAVING

Electric Power Layouts

Uptegraff announces a new series of Liquid Filled Load Center Transformers, in eighteen ratings, from 150 to 2500 KVA, 3-phase. Designs are based upon extensive experience with this type of transformer, and represent modern engineering and manufacturing practice.

To simplify the selection and arrangement of auxiliary equipment, we have prepared a unique brochure, with which you can readily determine overall dimensions, total weights and other information for any combination of the Basic Transformer Unit with various types of switches and accessories. A check system permits the easy and accurate locating of desired data pertaining to various arrangements of properly rated equipment for any selected basic unit.

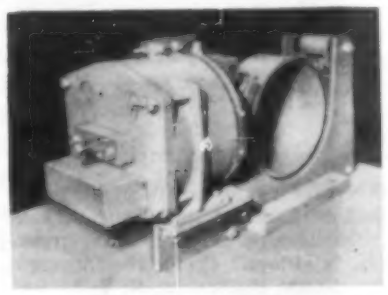
SEND for a free copy of this 20-page data book, giving important and useful information on Uptegraff Load Center Transformers.

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania

If you write maker identify as **IEN - 13903**

Drive - Magnet dc. motor brake meets AISE Standard for mill motors

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Designed for heavy duty

New line of magnet operated brakes is designed to meet the AISE Standard No. 11 for use in mill drives, materials handling, marine service and on bridges. Six sizes apply on 8 to 23-in. brake wheels. Adjustment is provided at one end to compensate for lining wear. A self-centering fulcrum positions both shoes for equal braking action. An armature gap indicator shows normal gap positions and tells when adjustment should be made.

Construction includes a self-contained strongbox coil that can be changed without removing the magnet assembly, provision to remove the brake wheel vertically and to replace the linings without removing the shoe assembly. Bronze bushings are employed with hardened bearing pins.

If you write maker identify as **IEN - 13904**

Control - Materials level indicator for use on a bin, hopper or chute

Source: BIN-DICATOR COMPANY
13946-93 Kercheval, Dept. IEN, Detroit 15, Mich.

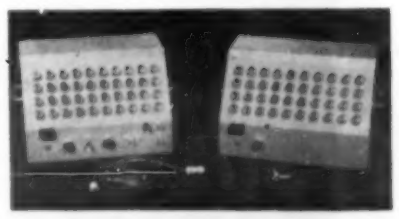
Model "AL" Special

A bull's-eye signal light has been built into this new diaphragm operated Bindicator for installations requiring a signal that can be seen readily. The indicator employs the company's previously developed switch mechanism which is operated by a flexible diaphragm actuated by pressure of the material in a bin, hopper or chute. Various diaphragm materials are available for given service requirements. The new unit adds $12.50 to the standard price of the indicator without a light.

If you write maker identify as **IEN - 13905**

Testing - Circuit tracer also indicates shorts in a cable

Source: LINK AVIATION INC.
Dept. IEN, Binghamton, N. Y.



Portable design

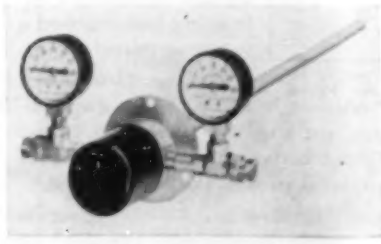
Model 203 is a new combination of master and remote stations, with removable receptacle mounting plates, to apply on a range of sizes and types of electric cable in which circuits are to be checked or tests made for shorts and grounds. The master connects also to a source for 110-volt ac.

Duplicate banks of lights on the two units indicate circuits as connections are made one after the other. A motor driven scanning drive operates at 5 contacts per second. One light on the bank indicates the circuits, one by one. Two or more lights on the remote unit indicate a short.

If you write maker identify as **IEN - 13906**

Control - Air pressure regulator for temperature control valves, dampers

Source: POWERS REGULATOR CO.
3400 Oakton St., Dept. IEN, Skokie, Ill.



Bulletin 308

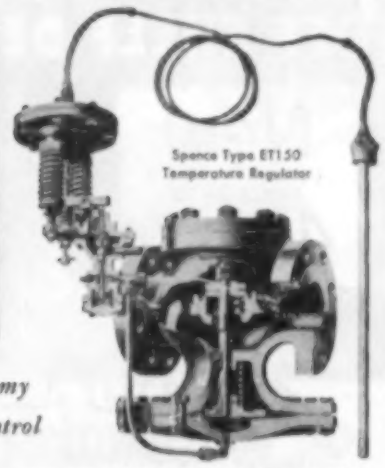
Air pressure, for a diaphragm valve or damper motor, to maintain a predetermined pressure is increased by this new Limitem control in step with rise in temperature. The bulb actuated differential expansion unit is designed for temperature control in a range between 35 and 135 deg. F. It mounts a graduated adjustable dial beneath a cover cap. Sensitivity can be set between ⅛ and 2 lb. per sq. in. per deg. change.

Gages read incoming and outgoing pressure on the two sides of the 1¾-in. housing. Average bulb length is 18 in. with a ⅜-in. pipe or flange connection.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13907**

NO Reducing Valve Needed



Here's real economy in temperature control

Because Spence Temperature Regulators are designed to limit heater steam pressures to an adjustable maximum, the need for a separate reducing valve is completely eliminated.

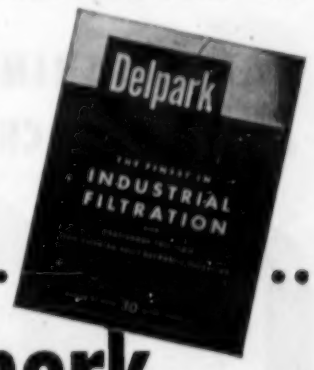
This means one relatively small combination pressure and temperature regulator replaces a reducing valve of the same size and a larger temperature regulator. Practically the entire cost of the large separate temperature regulator is saved. And, the total saving would also include the cost of a 3-valve by-pass along with all labor for installation.

This design feature is just one of the reasons for the thousands of Spence installations throughout American industry. *For details of other important design features, write for Temperature Regulator Bulletin.* SE-137

SPENCE ENGINEERING COMPANY, INC. Spence
WALDEN, NEW YORK

If you write maker identify as **IEN - 13908**

free Bulletin



ON Delpark

FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

Backed by More Than 30 Years in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVENUE LEBANON, INDIANA

If you write maker identify as **IEN - 13909**

BUSCHMAN

PORTABLE PRESS-TENDER

• PRESS TO PRESS
• PRESS TO TOTE BOX
• PRESS TO CONVEYOR

Featuring fast one-man positioning and adjustment, the BUSCHMAN powered belt Press-Tender eliminates costly manual handling . . . adds profits to press room operation.

Operating angles of the Press-Tender are variable from 13° to 48° and working heights are adjustable both front and rear. Adequate capacity for any press is assured by belt speed of 72 feet per minute.

Durable in construction and stable in design, the BUSCHMAN Press-Tender is available in models and sizes for use with any size or type of press.

For complete specifications, send today for Bulletin B150.

C-1706-EWB

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

THE E. W. BUSCHMAN CO.
4447 Clifton Ave. • Cincinnati 32, Ohio

If you write maker identify as **IEN-13910**

T-J Spacemaker CYLINDERS

OIL pressure to 750 — AIR to 200 P. S. I.

Now the sensational new T-J Spacemaker sets the pace in compact cylinder design and efficient performance!

New "Self-Aligning" adjustable oil cushion means faster acceleration and better cushion than ever before . . . New T-J Super Cushion Flexible Seals for air insure positive cushion with automatic valve action for fast return stroke.

More plus features include—heavy wall, precision honed, hard chrome plated, seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, high-tensile, *hard chrome plated piston rod.* Write for bulletin SM-454-2. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON
RIVETORS AIR AND HYDRAULIC CYLINDERS CUTSERS CLINCHORS

If you write maker identify as **IEN-13911**

BALL BEARING JOURNAL JACKS

- Low closed height (10 to 16 inches), and from 5 to 8 inches of lift mean that this handy jack can do a lot of jobs for machinery movers, builders, railroads, etc.
- Ball bearing-smooth operation, but plenty of lift capacity—15, 25, 35 or 50 tons!
- Simple, rugged and compact design. Sealed against dust and dirt, and all working mechanism is packed in grease and enclosed.
- Accurate control of load at all times, and load can be held at any height.

Write for new Bulletin 1515-B and details on BUDA's complete line of mechanical and hydraulic jacks.

"A jack for every job"

BUDA THE BUDA CO. Harvey, Illinois

Division of Allis-Chalmers Manufacturing Company

If you write maker identify as **IEN-13912**

Broaches for Maintenance Men

For KEYWAYS

du Mont *Minute Man* Keyway Broach Kits for cutting keyways from 1/16" to 1" in any bore from 1/4" to 3" *by hand in one minute for as little as one cent per keyway.*

For SQUARE HOLES

du Mont *Minute Man* High Speed Steel Square Broaches finish cast or drilled holes in one pass. Available from stock *at your Industrial Distributor's* for 5/16" to 3/4" squares. Astoundingly low priced!

SEE 'EM DEMONSTRATED
PLANT MAINTENANCE SHOW
CHICAGO — Booth No. 496
or Clip this Coupon

The du MONT CORPORATION, Greenfield, Mass.
MAIL FREE BROACH CATALOG AND PRICE LIST N to

Name.....

Company.....

Address.....

NEW LITERATURE—*Continued*

If you write maker identify as **IEN-01075**

SCREW DRIVING . . Portable pneumatic screwdriver and nut-setter tools for production assembly operations. Bulletin 13, 40 pages, shows a variety of handles, drives, attachments, bits, finders, impact wrenches and application ideas. Keller Tool Co., Parks St., Dept. IEN, Grand Haven, Mich.

If you write maker identify as **IEN-01076**

SEALING COMPONENTS . . Test samples of flexible plastic plugs are offered to use as dust and moisture seals, thread protectors, shipping caps, tube closures. Details on five types and 100 sizes in file folder, "CaPlugs." Protective Closures Co., 2207 Elmwood Ave., Dept. IEN, Buffalo 23, N. Y.

If you write maker identify as **IEN-01077**

SIGNALING . . Selection of pilot lights is described by 8-page technical article reprint along with data on lamps and available assemblies. Bulletin L-155. Dialight Corp., 60 Stewart Ave., Dept. IEN, Brooklyn 37, N. Y.

If you write maker identify as **IEN-01078**

SPROCKETS . . Taper-Lock stock sprockets from No. 40, 1/2-in. pitch, to No. 160, 2-in. pitch, together with roller chain. List prices in 8-page Catalog C-56-54. Morse Chain Co., 7601 Central Ave., Dept. IEN, Detroit 10, Mich.

If you write maker identify as **IEN-01079**

STEELS . . Fast-machining ability of Rycut 40 alloy steel is due to its lead content. Production examples are shown in 8-page Bulletin 14-5 along with its properties. Joseph T. Ryerson & Son, Inc., P. O. Box 8000-A, Dept. IEN, Chicago 80, Ill.

If you write maker identify as **IEN-01080**

STRAPPING . . Tensioning tools, sealing tools, cutters for 3/4 to 2-inch steel strapping. Folder 710, 6 pages, reviews equipment, strapping, accessories. A. J. Gerrard & Co., 1950 N. Hawthorne, Dept. IEN, Melrose Park, Ill.

If you write maker identify as **IEN-01081**

TACHOMETERS . . Portable hand tachometers for speeds from 1 to 100,000 rpm., chronometric tachometers, stationary units, vibrating-reed unit. Bulletin 1046, 4 pages. Herman H. Sticht Co., 27 Park Pl., Dept. IEN, New York 7, N. Y.

If you write maker identify as **IEN-01082**

PERFORMANCE TESTING . . Process control, dynamic performance, environmental testing, leak detecting are applications of electronic equipment and data-handling units which the company designs to specification. Bulletin CEC-1304, 16 pages. Consolidated Engineering Corp., 300 N. Sierra Madre Villa, Dept. IEN, Pasadena 15, Calif.

If you write maker identify as **IEN-01083**

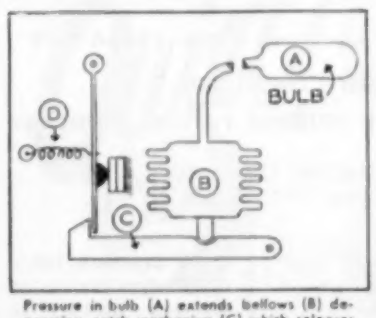
TENSION TESTING . . Hand and power machines for testing tension, compression, shear; also gages for measuring tension, pressure, load, overload. Bulletin 19-F, 6 pages. W. C. Dillon & Co., 14620 Keswick St., Dept. IEN, Van Nuys, Calif.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-13913**

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

VAPOR PRESSURE bellows assembly solves problem of accurate, dependable temperature control



Pressure in bulb (A) extends bellows (B) depressing catch mechanism (C) which releases spring contact (D) that shuts off defroster circuit.

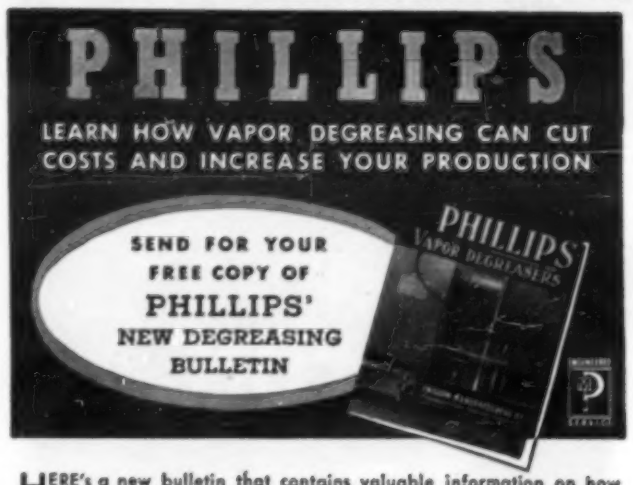
A timing motor manufacturer neatly solved a temperature-control problem by installing a bellows assembly in its defroster unit. The problem was: how to shut off the defroster circuit once defrosting had reached a pre-determined point.

The mechanism had to be precise and reliable, else defrosting might continue over too long a period and food spoilage set in. The positive-acting components of a vapor-pressure bellows system proved the ideal device.

Clifford's vapor-pressure thermostatic bellows systems are simply designed, dependable, economical and easy to install. They are used not only by refrigerator manufacturers but in all types of Diesel engines, stationary and automotive, as well as truck and passenger car gasoline engines. They are also used as temperature regulators for water heating and cooling tanks, steam coolers, acid baths, tempering baths, glue heaters.

For further information, write: Clifford Manufacturing Company, 130 Grove Street, Waltham 54, Mass. Division of Standard Thomson Corporation. Sales offices in New York; Detroit; Chicago; Los Angeles; Waltham, Mass.

If you write maker identify as **IEN-13914**



HERE's a new bulletin that contains valuable information on how modern vapor degreasing speeds up production in modern factories by making metal cleaning operations faster and more economical. Listed below are some of the features of this new book:

WHAT DEGREASING IS — A full description of what vapor degreasing is and what it will accomplish for you.

HOW DEGREASERS WORK — A series of photographs and written description shows what happens in the degreasing process.

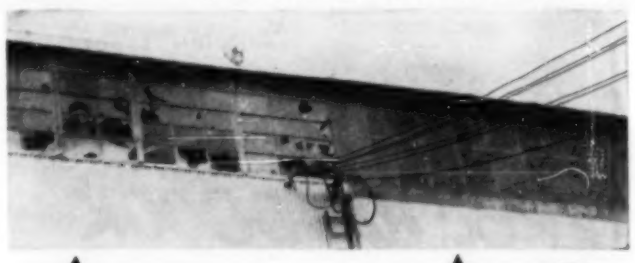
DEGREASER APPLICATIONS — Illustrates number of different applications of degreasers to solve metal cleaning problems in various industries.

COMPLETE LINE OF STANDARD DEGREASERS — Describes Phillips' full line of standard equipment, including batch type, combination, rotomatic, and conveyorized models.

SPECIALLY ENGINEERED UNITS — Tells about Phillips' service in designing special degreasing units for solving unique metal cleaning problems.

Phillips *MANUFACTURING COMPANY*
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

If you write maker identify as **IEN-13915**



STOP THIS **WITH RESOLITE**

Material represents less than 20% of the cost of reglazing. The *real* cost is high-priced labor. You can end expensive pane replacement with Resolite.

A fiberglass-reinforced polyester resin, translucent Resolite can't shatter or crack when hit by flying objects or subjected to severe vibration. It is unaffected by weather extremes of heat, cold or moisture and by usual industrial fumes.

Flat Resolite panes, factory cut to size, are installed like glass. For skylights or sidewalls in corrugated buildings, Resolite is molded to nest with all standard metal or asbestos corrugated sheets. Resolite passes up to 90% as much light as clear glass — a soft, diffused light which reduces eyestrain.

For further information see Sweet's Plant Engineering File or write:

RESOLITE CORP., Box 514, Zelienople, Pa.
Distributors in principal cities, U.S. and Canada

If you write maker identify as **IEN-13916**

first really new development in safety spectacles in years!

WILLSON *"Contour-Spec"**

Style WCS47
Covered by Design Patent 168,988

***New*... hinged bridge gives snug, comfortable fit...self-adjusting to any facial contour!**

1 **New hinged bridge** combines the flexibility of cup-type goggles with the lightweight, compact protection of safety spectacles.

2 **One all-purpose size** permits universal fit. Bridge hinge gives automatic adjustment to any bridge width from 18-26 mm.; one eye size—47 mm.—fits everybody. *No need to stock a variety of bridge and eye sizes.*

3 **Plastic nose-and-cheek pads** provide *full closure* around eye cavity.

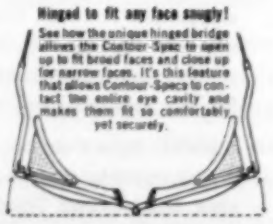
4 **Contour-shaped** adjustable plastic-and-cable temples hold spectacles firmly in place.

5 **Matching sideshields** are perforated plastic, providing protection at sides—*fold back* for pocket compactness.

6 **Butyrate frame** — *toughest plastic used for spectacles.* Standard frame is flesh colored, fitted with 6-curve Willson Super-Tough* glass lenses. Available also with green frame and sideshields, fitted with Willsonite* Super-Tough green glass lenses.

Order a supply of Contour-Specs from your Willson distributor. Let your workers try their amazingly greater comfort, and see how they're preferred over ordinary safety spectacles!

Hinged to fit any face snugly!



See how the unique hinged bridge allows the Contour-Spec to open up to fit broad faces and close up for narrow faces. It's this feature that allows Contour-Specs to contact the entire eye cavity and makes them fit so comfortably, yet securely.

More Than 300 Safety Products — Carry This Famous Trademark
WILLSON *Established 1870* *Trademark

WILLSON PRODUCTS, INC., 217 Washington Street, READING, PENNA.

If you write maker identify as IEN - 13917

25% MORE POWER!

New 5U ELECTRIC only 6¼ pounds

ROTARY IMPACTOOL

most powerful 1/2" drive!

- Tightens nuts and bolts faster—and tighter
- Lighter in weight . . . handier to use
- Multi-purpose—extra reserve power for faster, easier drilling, screw driving, reaming, tapping, wire brushing, hole sawing, etc.

WRITE TODAY for full details

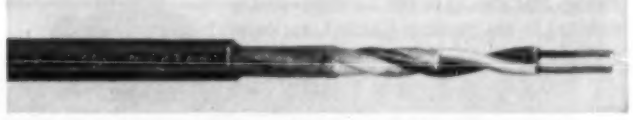
Ingersoll-Rand

11 Broadway, New York 4, N.Y.

18-145 Originators of Impactools • Air & Electric

If you write maker identify as IEN - 13918

New U. S. ROYAL MASTER portable cord OUTPERFORMS, OUTLASTS ALL OTHERS!



Comparative tests show U. S. Royal Master portable cord outlives the average molded cord by 88%—actually gives $1.88 in value for every cord dollar!

Designed by U. S. Rubber Engineers after two years of intensive research, involving more than 10,000 separate tests, on 1,000 cords of all makes...

Tested in actual outside plant installations, as well as in our own laboratories....

Proved the finest cord you can buy! New U. S. Royal Master gives 88% longer life than the average of competitive molded cords—far longer than any other cord—surpasses even a hypothetical cord combining the best features of all those tested!

Far greater value, too! In spite of almost doubled service life, this great new cord is in the same price category as other molded cords—giving you $1.88 in cord value for every cord dollar!

Write today for the full facts on the superiority of the new U. S. Royal Master portable cord over all others. See the savings it offers *you!*

US RUBBER UNITED STATES RUBBER COMPANY
ELECTRICAL WIRE AND CABLE DEPARTMENT
ROCKEFELLER CENTER, NEW YORK 20, N. Y.

If you write maker identify as IEN - 13920

Control - Electronic equipment to sequence a gas or oil burner

Source: COMBUSTION CONTROL DIVISION
718 Beacon St., Dept. IEN, Boston 15, Mass.

Bulletin CF-30

Burners operating on light oil or gas, or a combination of the two, can be protected against explosion hazards of burning fuel by application of this new System FJ-2 Fireye equipment. It monitors oil and gas to the main and pilot flames and shuts off all fuel within 2 to 4 sec. after the flame goes out. Operation centers on the flame-sensitive Firetron cell.

Start up operation and shut down cycle of the burner are automatically programmed to permit unattended operation. The main fuel valve is not permitted to open, on piloted burners, until the pilot flame is established. A 5-sec. trial of ignition period is set up on installations employing direct electric spark ignition. The presence of flame prior to start up prevents burner operation.

If you write maker identify as IEN - 13921

Cleaning - Rotary brush machine to scrub, sand, wax and polish a floor

Source: FINNELL SYSTEM INC.
Dept. IEN, Elkhart, Ind.

Attachments to order

Series 800 designates a new line of Motor Weighted floor cleaning machines. The line includes three sizes with brush spread at 15, 18 and 21 inches. Operation in each case is 172 rpm. at the brush. The motor rates ½, ¾ and 1 hp. Drive is through a planetary transmission that is sealed and does not require any surface lubrication.

Control centers at the handle. Current is brought to the motor through a 50-ft. rubber covered extension cord. A container for wet operation mounts beneath the handle. The machine mounts on two 5-in. rubber tired wheels. It features quiet balanced operation.

If you write maker identify as IEN - 13922

Protecting - Capacitance unit actuates circuit on worker approach

Source: R. G. GENZLINGER INCORPORATED
Dept. IEN, Neshaminy, Pa.

Model TGS150

Illustrated is the control housing unit of new capacitance equipment to stop or change a machine or operation immediately if any individual moves into the "protected area". The housing connects to a source for 110-volt ac. It is actuated by an antenna shaped to a pattern to provide required protection in a limited area or a large one.

Sensitivity can be adjusted so a body, approaching to within 12 in. of the pickup plate, will upset the circuit balance and operate a relay connecting in the control circuit. Relay contacts can be specified either normally open or normally closed with rating at 5 amp. on 110-volt ac.

If you write maker identify as IEN - 13923

Pump - Motor driven centrifugal rates 10 gpm. at 3 ft. handling water

Source: GRAYMILLS CORPORATION
3705 N. Lincoln Ave., Dept. IEN, Chicago 13, Ill.

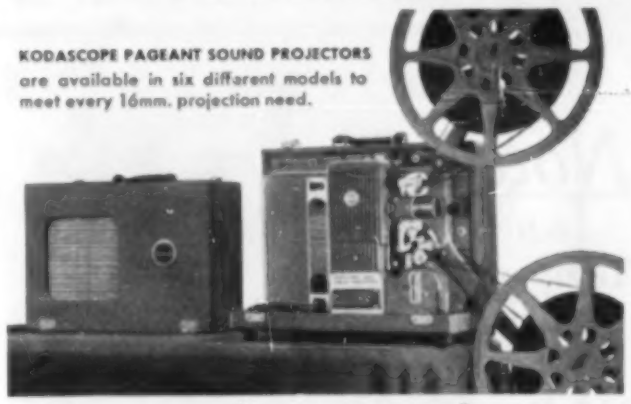
Bulletin 3000

Bronze impeller is mounted on a stainless steel shaft extending from the enclosed motor inside a bronze housing in this new Series H-3000 pump. The motor is shaded pole design. It measures a little under 4 in. in diameter. The assembly mounts on a plate between the pump and the motor. It is available for operation on 110 or 220-volt, 60-cycle single-phase ac. Maximum liquid level is 3⅝ in. in the standard design but other column lengths can be specified. The discharge connection is regularly threaded for ¾-in. pipe. Can be supplied with a hose thread.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13924

KODASCOPE PAGEANT SOUND PROJECTORS are available in six different models to meet every 16mm. projection need.



Put movies to work with this trouble-free projector

Movies make almost every type of training or technical information easy to understand . . . easy to use . . . and easy to remember.

You know your movie shows will be successful when you use a Kodascope Pageant 16mm. Sound Projector. Faulty lubrication, the most common cause of projector breakdowns, is eliminated by the Pageant's permanent pre-lubrication. Only the Pageant has this important feature.

Simple, guided threading makes the Pageant unusually easy to operate. Completely portable, projector and speaker fit into a single, handy, lightweight case.

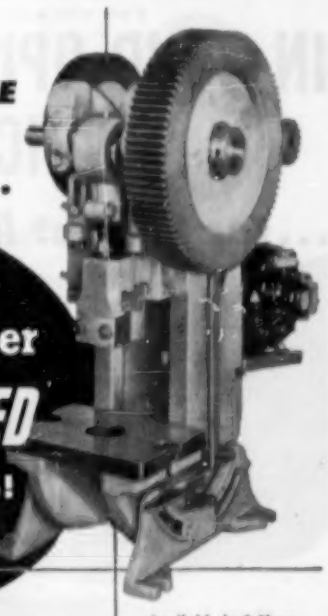
WRITE FOR FREE BOOKLET—"The Kodascope Pageant Sound Projector."

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 13925

When a SLOW STROKE will speed production...



GET A benchmaster BACK-GEARED PUNCH PRESS!

Benchmaster gives you the answer to deep-draw and forming operations on small presses...The new BACK-GEARED Series! Built to the same rigid specifications as standard and deep throat models, but now equipped for SLOW, POWERFUL STROKES ranging from only 40 to 100 per minute! Benchmaster Automatic Friction Roll Feeds available in several roller widths for automatic feeding.

Available in 3 Sizes: 4 Ton Standard, 4 Ton Deep Throat, 7½ Ton models. Shut heights and other general specifications remain the same as standard models.

Ask for facts today!

P.S. You still enjoy Benchmaster dependability and economy on the Back-Geared Models!

benchmaster MANUFACTURING COMPANY
1835 West Rosecrans Ave., Gardena, California

If you write maker identify as IEN - 13926

LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

Logan AIR CONTROL VALVES

• BALANCED PISTON
• COMPACT DESIGN
• EASILY INSTALLED
• SELF-CLEANING

79 MODELS MOSTLY STOCK DELIVERY

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Consult Logan for your Special Heavy-Duty, Mill-Type Cylinder requirements.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as **IEN - 13927**

Now... a new Temperature Indicator-Controller by Fenwal

Fenwal's new *Series 540* is a remote Temperature Indicator-Controller that combines low cost with high accuracy over a range of 100° to 700°F. Designed for a wide variety of processing equipment, the new controller operates on a liquid-filled bulb and capillary system, with a bellows transmitting reponses to the indicating pointer. Setting pointer and bulb temperature pointer indicate against the same scale face, permitting "glance" comparison of both readings at a distance. Accuracy is maintained to within 3% over the 100°-700°F range. An adjustable differential can be varied between 0.8% and 4% of scale range. For details, **write for Bulletin MC-122. Fenwal Incorporated, 712 Pleasant Street, Ashland, Mass.**

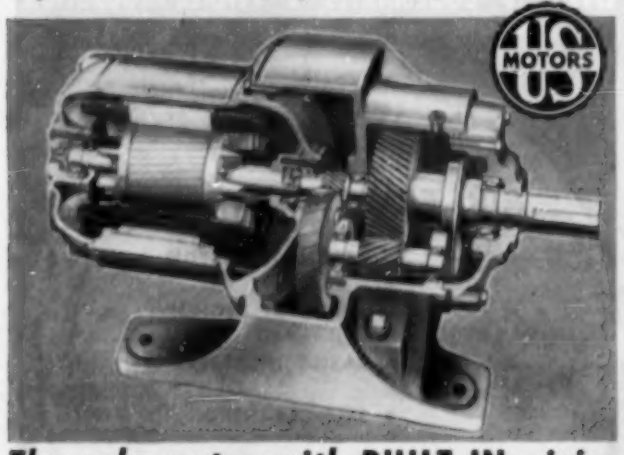
Fenwal Controls Temperatures ... *Precisely*

If you write maker identify as **IEN - 13928**

IN YOUR OPINION, WHICH PINION?

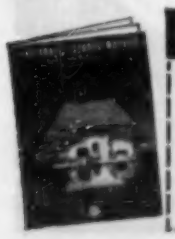
...for longest life in a gearmotor

In an internally geared motor the pinion on the motor shaft is the vital link between motor and gearing. Now compare the U. S. Syncrogear motor pinion with the common type. Note the extra large section area of the U. S. design. It has a long solid shank that anchors into the motor's hollow shaft, whereas the ordinary shell type has a small section area, short keyed. Obviously the U. S. design is most substantial, longer lasting, more resistant to deflection and can carry high speed loads far more safely than the common designs.



The only motor with* BUILT-IN *pinion

U. S. SYNCROGEAR



FREE BOOKLET GIVES THE FACTS

U. S. Electrical Motors Inc. IEN-12
Box 2038, Los Angeles 54, Calif. or Milford, Conn.

Name_____
Company_____
Address_____
City_____ Zone____ State____

NEW LITERATURE —*Concluded*

If you write maker identify as **IEN - 01084**

THREADING TOOLS . . Hand and machine taps, also thread and plug gages. Catalog 25, 16 pages, contains list prices, tap-drill size tables, suggestions on tapping various materials. Royco Tool Co., Dept. IEN, North Branch, Mich.

If you write maker identify as **IEN - 01085**

TRACTORS . . Crawler tractors, tractor shovels, graders, scrapers, are shown in a number of surface and underground mining operations by 16-page Bulletin MS-977. Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as **IEN - 01086**

VALVES . . Plug, angle needle, selector, restrictor, check valves, also engine primer controls, aircraft components. Catalog, "Precision Controls," 24 pages. Kohler Co., 1230 High St., Dept. IEN, Kohler, Wis.

If you write maker identify as **IEN - 01087**

VALVES . . Teflon plastic forms the plug in a line of 2, 3 and 4-way selector valves for 100-lb. service in ⅛ to 1-in. pipe sizes. Operating temperature can be from minus 65 to plus 250 deg. F. Bulletin 754, 4 pages. Republic Mfg. Co., 1930 W. 77th St., Dept. IEN, Cleveland 2, Ohio.

If you write maker identify as **IEN - 01088**

VENTILATING . . Large centrifugal blowers for forced-draft service have a non-overloading impeller design. Sixteen sizes have impeller diameter from 15 to 66 inches. Bulletin 802, "Forced Draft Fans," 4 pages. Clarage Fan Co., 620 Porter St., Dept. IEN, Kalamazoo, Mich.

If you write maker identify as **IEN - 01089**

VISES . . Positive fast grip is provided by an air cylinder for the Vi-Speed bench vise. You can use special jaws, mount the vise in any position, or apply two or more to hold long work. Bulletin 4-V, 4 pages. Van Products Co., 3783 W. 12th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as **IEN - 01090**

WELDING ELECTRODES . . Stainless steel types for ac. and dc. welding are covered in 16-page Bulletin DS-164 along with service recommendations. Crucible Steel Co. of America, Box 88, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as **IEN - 01091**

WELDING ELECTRODES . . Mild-steel and low-alloy electrodes for dc. and ac. service. Bulletin E-177, 36 pages, gives compositions for SAE steels, a preheating table, and estimating tables for deposit weight. Metal & Thermit Corp., 100 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 01092**

PRESSURE WELDING . . Hand tools join non-ferrous metals by pressure welding in the Koldweld process. Bulletin, 6 pages, describes what can be done with sheet, wire, tube for butt and lap joints. Utica Drop Forge & Tool Co., 2415 Whitesboro, Dept. IEN, Utica 4, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 13930**

★It's here – a truly great achievement in *sub-miniature* control engineering and hermetic sealing – the new Guardian Series 2005 Relay. And here are the features that design engineers evaluate so highly: (A) de-gassed construction materials prevent contact contamination; (B) extremely high contact pressure in both energized and de-energized positions insures reliable operation at both low and maximum current ratings; (C) internal wiring, limited to two connections from coil terminals to header pins, virtually eliminates breakage of leads. It's easy to see – this new Guardian Series 2005 hermetically sealed sub-miniature relay can equip your product to prevent rejects and reduce service calls. Prompt quotations gladly given upon request.

WRITE FOR SPECIFIC ENGINEERING RECOMMENDATIONS FOR YOUR APPLICATIONS

GUARDIAN ELECTRIC
1620-P W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as **IEN - 13931**

See your Ruberoid Calsilite Applicator, or write The Ruberoid Co., 500 Fifth Ave., New York 36, N. Y.

Ruberoid's new Three Segment Calsilite Pipe Insulation offers these advantages:

1. Fewer pieces per section—lower labor cost
2. Greater efficiency due to fewer voids
3. Neater appearance—3 smooth pieces
4. Less breakage on job and in transit

The RUBEROID Co.
Asphalt & Asbestos Building Materials

If you write maker identify as **IEN - 13932**

Do these 5 NEW ASCO SOLENOID VALVES meet a special need for you?

Five completely new solenoid valves were developed by ASCO during 1954. Smaller size, greater efficiency and longer life fit these valves to specific industrial uses.

A NEW ASCO 2-WAY SOLENOID VALVE

COMPACT: Only 2¾" face to face; 3 13/16" overall height.

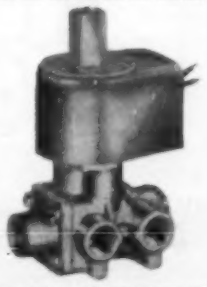
Simple: Just two operating parts. Can be mounted in any position. Low power consumption. Standard, explosion proof or watertight solenoid enclosures. Normally open or normally closed.

BULLETIN 8210A

A NEW ASCO 4-WAY MIDGET SOLENOID VALVE

Designed for control of small double acting cylinders. Compact: Under 4½" high, 2" wide, 2" deep, with standard NEMA I solenoid enclosure. Operates up to 400 cycles per minute mounted in any position. Standard, explosion proof or watertight solenoid enclosures.

BULLETIN 8345



A NEW ASCO SOLENOID PILOT CONTROL VALVE WITH SAUNDERS PATENT TYPE BODY

Absolutely tight shut-off control for corrosive liquids and gases. The dependable ASCO pilot provides automatic control of main diaphragm valve using auxiliary pressure. Available normally open or normally closed in a wide selection of body materials. Standard, explosion proof or watertight solenoid enclosures.

SPECIAL BULLETIN 8336

A NEW ASCO CORROSION RESISTANT 3-WAY SOLENOID VALVE

Two valves designed specifically for processing plants where corroding liquids or gases are handled. Many types of body materials available. Standard explosion proof or watertight solenoid enclosures.

SPECIAL BULLETIN 8300

A NEW ASCO CORROSION RESISTANT, CYLINDER OPERATED 2-WAY VALVE

BULLETIN 3338

ASCO Solenoid VALVES — ASCO Electro-Magnetic CONTROLS

Write for additional details on any of these valves. Please specify bulletin number.

Automatic Switch Co.
383 LAKESIDE AVENUE, ORANGE, NEW JERSEY

WE DESIGN AND MANUFACTURE A COMPLETE LINE OF SOLENOID VALVES AND ELECTROMAGNETIC CONTROLS INCLUDING AUTOMATIC TRANSFER SWITCHES, REMOTE CONTROL SWITCHES, CONTACTORS, RELAYS, AND COMPLETE CONTROL PANELS

If you write maker identify as IEN-13934

FORT WORTH
SCREW CONVEYORS AND ACCESSORIES

FORT WORTH HELICOID SCREW has many advanced features, which definitely rate it the outstanding conveyor on the market today. All sizes up to 16" are cold rolled by the Fort Worth process which hardens the wearing surface and assures longer life.

Component parts necessary to fit practically any installation requirement are manufactured to highest standards and can usually be furnished from stock.

WRITE FOR CATAOG SECTION 200
FORT WORTH WAREHOUSES

CHICAGO • ST. LOUIS • KANSAS CITY
MEMPHIS • ATLANTA • JERSEY CITY
LOS ANGELES • HOUSTON • SAN FRANCISCO

FORT WORTH STEEL & MACHINERY CO.
DEPT. 212, 3600 McCART ST., FORT WORTH, TEXAS

If you write maker identify as IEN-13935

good idea!

"POWER BELT UNIT OF 1001 USES" — For those lighter duty floor to floor conveying jobs the ARR-O-VEYOR, JR. power conveyor moves the goods smoothly, continuously up or down. Often installed in stairwells to escalate materials from first floor to basement or second floor. Ideal as permanent booster in long gravity conveyor lines. Imagine movement of 150' to 200' with one small ARR-O-VEYOR, JR. and 15 to 20 10' gravity sections! You can pay more, but you can't do it more economically. Available in 12" and 16" belt widths, 6' thru 30' in length and motors ¾ HP & 1 HP.

Full facts on all ARROW power and gravity conveyors. Write to:

arrow PRODUCTS, INC.
112 Arrow Bldg. 417 Front St. Grand Rapids, Mich.

If you write maker identify as IEN-13936

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES
Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood — permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as IEN-13937

Storing - Wheel and roller rack holds and forwards work piece boxes

Source: RAPIDS-STANDARD COMPANY
342 Rapistan, Dept. IEN, Grand Rapids 2, Mich.

The work moves forward

Flow-Rack trade names a new assembly of structural members and inclined conveyor sections employing wheels or rollers. The rack is built in a standard 6-ft. height. It can be specified in desired length, unit width and multiple for a given installation.

Boxes filled with work parts are positioned at the rear to move forward by gravity as the boxes at the front are emptied and removed. Finish is in baked enamel. Each rack is self-supporting. A free sample of actual components, making up the rack, will be sent on request with further specifications and details.

If you write maker identify as IEN-13938

Rectifying - Selenium units, cartridge design for instrument use

Source: INTERNATIONAL RECTIFIER CORP.
1521 E. Grand Ave., Dept. IEN, El Segundo, Calif.

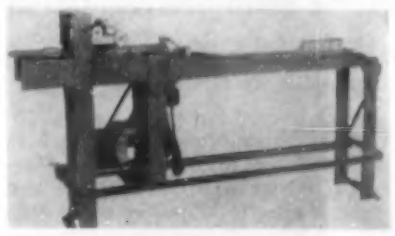
Bulletin H-2

Type U45HP and U50HPF are two new cartridge type selenium rectifiers for use as high voltage power supplies in instruments such as geiger counters. Type U45HP is a half-wave unit, 2 in. in length by ¼ in. in outside diameter. It rates 1.5 ma. maximum at 900 volts dc. Type U50HPF measures 1⅞ in. in length by ¼ in. in outside diameter. It rates 1.5 ma. maximum at 1,000 volts dc. Both are supplied with pigtail leads.

If you write maker identify as IEN-13939

Marking - Coding machine imprints 70 small cartons per minute

Source: INDUSTRIAL MARKING EQUIPMENT CORP.
454 Baltic St., Dept. IEN, Brooklyn 17, N. Y.



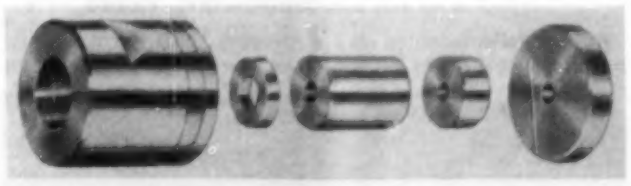
Variable speed drive

Uniform legible ink impression is made on cartons riding a belt conveyor through this new machine. The impression is made with inked rubber dies that can be changed quickly. The machine consists of an indexing conveyor, printing unit, take-away belt, and a belt to turn cartons back to upright position for packing. The printing unit includes a motor driven printing wheel, an ink reservoir, transfer roller and housing.

If you write maker identify as IEN-13940

Press Tools - Carbide-steel die to head hexagon recessed head screws

Source: CHAMPION TOOL & DIE CO.
Box 415, Dept. IEN, McKeesport, Pa.



Ask for bulletin, "Reduce Die Costs"

Illustrated is a typical five-piece die designed by the company to head hexagon recessed screws. It employs a tube type casing made of hardened alloy tool steel, a hardened tool steel cap with a hexagon recessed hole and a tapered outside diameter to fit a tapered recess in the casing. When the cap is pressed into place it provides correct preload to resist upset pressure. Next to the cap is a carbide insert and a bushing and finally a plate.

Three million blanks were produced with one die using four caps in manufacture of ⅜-in. pointed blanks, ⅝ in. in length, at a total cost of $150. This compares to $750 for 60 steel dies previously required for the same production.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-13941

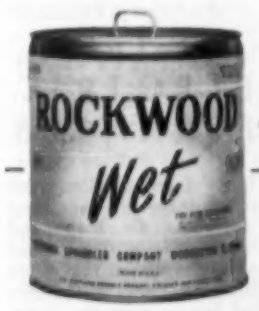
EVERY ENGINEER will want a copy of this BULLETIN

WRITE FOR BULLETIN 213. Complete details and mounting dimensions on Hannifin Series "A" Square Type Fluid Power Cylinders, usable up to 200 psi, air or oil. This is the cylinder with the new, externally removable cartridge gland...the biggest improvement in cylinder design in the last 50 years. The "A" line is complete! 11 bore sizes from 1½" to 14"—13 standard mountings, many combinations. Steel heads. Brass bodies. Piston rods ground, polished and hard chrome plated. Send for Bulletin 213. It's the easiest catalog to use in the cylinder business.

HANNIFIN
Hannifin Corporation, 507 S. Wolf Road, Des Plaines, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN-13942

Put out deep-seated fires - FAST!



The most effective way to introduce special firefighting liquids into your water lines is with the Rockwood Eductor. It feeds *automatically* at any fixed percentage, pre-determined rate.

For quickest results against deep-seated fires in wood, paper, sawdust, cloth, rubber, etc., use the Eductor to feed in one part of Rockwood WET to 99 of water. This increases water's penetration and extinguishing action — reduces rekindling — saves time, water, manpower.

Against flammable liquid fires, the Eductor mixes 3 parts of Rockwood Double Strength FOAM with 97 of water, to form a fast smothering foam blanket. And for 5 types of discharge — FogFOAM, solid FOAM, high or low velocity WaterFOG or straight water stream — get Rockwood's versatile Type SG-60 Nozzle.

For complete details write for Rockwood's free, illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
Portable Fire Protection Division
312 HARLOW STREET, WORCESTER 5, MASSACHUSETTS

If you write maker identify as IEN-13943

WALKER SELENIUM RECTIFIERS
INSTALL THEM — FORGET THEM
Engineered for Extra Years of
AC TO DC POWER CONVERSION

LOW COST, QUIET, HIGHLY EFFICIENT, LONG LIFE NO MAINTENANCE

Walker Selenium Rectifiers are engineered and built to give *extra* years of service and inexpensive operation. They are highly efficient, have a power factor of 97% and a DC ripple of approximately 4%. All Walker Rectifiers are low priced. Only the highest quality components are used. Any number of rectifiers may be paralleled. Write for full details, today.

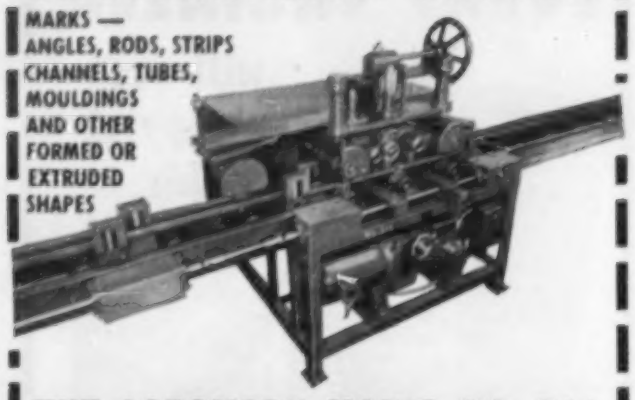
Walker

THE WALKER DIVISION
NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT

If you write maker identify as IEN-13944

Structural Steel MARKER

MARKS — ANGLES, RODS, STRIPS CHANNELS, TUBES, MOULDINGS AND OTHER FORMED OR EXTRUDED SHAPES



THE ACROMARK MODEL NO. 511 "ROLL TYPE" MARKING MACHINE

is complete with conveyor extensions to carry lengths of continuous extrusions underneath the finishing and marking roll for continuous or intermittent marking. Mechanically adjustable, motor driven, efficient—this is only one of hundreds of different types of marking machines made by "The Original Marking Specialists."

Write for Catalog — NOW

ACROMARK

THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN-13945

For Heat Treating Small Parts

HUPPERT

DeLuxe ELECTRIC FURNACES

• Here's a series of compact durable furnaces that are ideal for tool and die shops and small laboratories. Any desired temperature within the range of 300° to 1900° F. is controlled by an accurate, built-in Huppert temperature controller. All-steel construction — multi-insulation — sturdy Kanthal elements — counterweighted doors — removable porcelain tray.

Write today for literature on complete line of Huppert furnaces and ovens in floor and table models. (Also available in stainless steel at slight additional cost.)

Model No.	Inside Dimensions			Temp. Range	Watts 110 Volts AC	Price
	Wide	High	Deep			
2DL	4¼"	3½"	4⅜"	300° — 1600° F.	900	$ 80.00
22DL	4¼"	3½"	9"	300° — 1600° F.	1700	110.00
4DL	4½"	3½"	6"	300° — 1900° F.	1700	110.00
5DL	4½"	3½"	9"	300° — 1900° F.	1700	172.00
9DL	6"	6"	6"	300° — 1900° F.	2200	200.00
649DL	6"	6"	9"	300° — 1900° F.	3000	248.00
10DL	8"	4"	6"	300° — 1900° F.	2200	215.00
849DL	8"	4"	9"	300° — 1900° F.	3000	265.00

Available for 220 Volt AC at small additional cost. Stainless steel housing slightly higher.

K. H. HUPPERT CO.
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN-13946

ANCOR and **ANCORETTE**

STEEL FLOOR PLATES

for industrial floors

ARE SAFE, QUIET AND NEVER WEAR OUT

The largest and most complete stock in the entire field. Investigate this permanent, trouble-proof, maintenance-free, safe flooring.

SEND TODAY FOR FREE TRIAL OFFER

FLASH-STONE CO.
3723 Pulaski Avenue, Philadelphia 40, Pa.

Please send fully descriptive literature and details of free trial offer on ANCOR and ANCORETTE Steel Floor Plates.

NAME_____

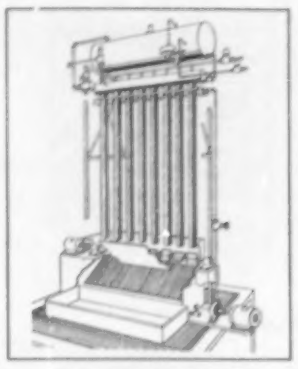
COMPANY_____

ADDRESS_____

If you write maker identify as IEN-13947

Refrigerating - Shell-ice maker produces fragmented ice automatically

Source: FRICK COMPANY
320 Broadway, Dept. IEN, Waynesboro, Pa.



Bulletin 54

A row of polished tubes suspends vertically from a header near the top of this new machine. The tubes are cooled with a direct expansion refrigerant supplied by connection to standard refrigerating equipment. Water is flowed over the tubes and freezes into a shell of clear ice.

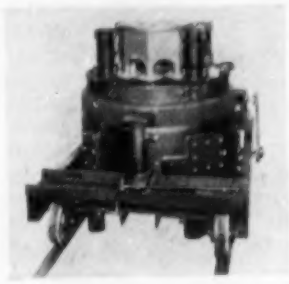
The water and refrigerant are shut off and hot refrigerant is admitted to the tubes when the ice is as thick as desired. This action releases the ice and permits it to slide from the tubes by its own weight. As the ice moves down from the tube bottoms, a rotating shaft carrying metal loops breaks it into fragments which ride a chute into a storage housing.

The freezing cycle is adjustable and is controlled automatically. Ice, ¼ in. in thickness, can be frozen and harvested in 10-min. cycles. Longer cycles will produce thicker ice. The fragmented product handles like coarse gravel or broken sea shells. It can be shoveled, conveyed, blown through a large hose. The machine is available in twelve sizes rating ½ to 30 ton in 24 hours. Patents have been applied for.

If you write maker identify as IEN-13948

Testing - Vibrating machine rates force output to 3,500 pounds

Source: MB MFG. COMPANY
1060 State St., Dept. IEN, New Haven 11, Conn.



To check performance

Power is supplied to operate this new vibrating machine, from either a rotating or electronic source, to test equipment mounted on the table. The assembly includes an optional motor-driven dolly riding a track to assist in handling and quick movement into and out of an environment chamber. A built-in jack permits raising the unit from the dolly and lowering it to the floor. Frequency range is 5 to 2,000 cycles per second.

If you write maker identify as IEN-13949

Rectifying - Selenium assembly with magnetic amplifier regulation

Source: VICKERS ELECTRIC DIVISION
1815 Locust St., Dept. IEN, St. Louis 3, Mo.

Details on request

Capacities range from 5 to 50 kw. for this new combination of **selenium rectifier and** magnetic amplifier to provide a regulated source of dc. power from an ac. line. The dc. voltage is controlled within 1 per cent of the selected value. The line includes seven sizes ranging from 5 to 50 kw. with output at 125 or 250 volts. Either voltage is obtainable by internal reconnection. The unit provides a source of power suitable for constant voltage dc. applications in general shop power supply to drive motors, operate magnetic chucks and provide power for laboratory uses.

If you write maker identify as IEN-13950

Rubber rolls, mounted on a stationary shaft, form a rotating rubber cushion to support sheet steel in its passage from

one pickling tank to another. The ring-like segments rotate individually, under the pull of the sheet, to support the sheet adequately and prevent scratching. The new arrangement costs about one-third less than previously employed skid blocks. Each rubber segment is 4 in. in width, weighs 9 lb. and has a 1-in. soft tough rubber cover mounted on a 1-in. base of hard graphite impregnated rubber. Manufacturer is B. F. Goodrich Co., 450 S. Main St., Dept. IEN, Akron 11, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-13951

Yes! THRIFTMASTER makes ALL TYPES of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Eccentric Type Adjustable Drillhead . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

• We Stock or Can Build the Right Drillhead for Your Job.

• Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*
1040 N. Plum Street
LANCASTER, PENNA.

Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN-13952

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:
Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN-13953

If you write maker identify as IEN-13954

EASTON®

PLATFORM CARS

SINGLE AND DOUBLE-TRUCK TO ANY DESIRED CAPACITY

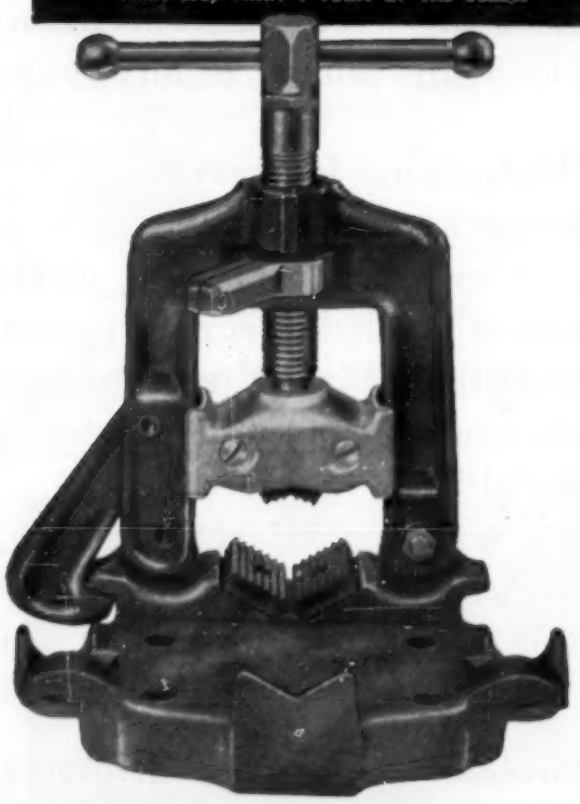
EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

A-1044

If you write maker identify as IEN-13955

ERIE PIPEMASTER

ADJUSTS AUTOMATICALLY
FROM 1/8" TO 2-1/2" PIPE
WITH LESS THAN 1 TURN OF THE SCREW



THE GREATEST NEW PIPE VISE IN 30 YEARS

When you see the new Pipemaster Vise, you'll agree it is outstandingly superior to any vise ever made. Its exclusive Quick-Acting feature* lets you adjust from 1/8" to 2½" pipe *automatically*, and easily clamp with *less than one turn of the screw!* Note the vertical pipe benders on both sides of the base—you get greater leverage ... make bending easier ... and you see the pipe bend. Note, too, the long, tool-steel, 3-faced top jaw and 2-faced bottom jaws—give you extra jaws at no extra cost. *pat. pend.

All Parts of All Erie Tools are Job-Tested and Unconditionally Guaranteed

Look for Pipemaster's completely redesigned line of hand pipe tools – wrenches, cutters, vises, stands.

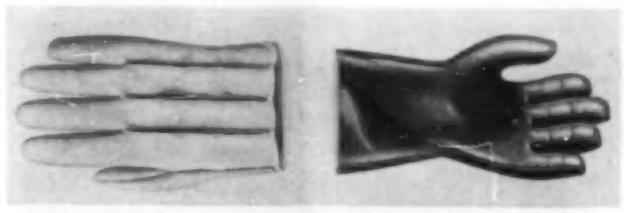
ERIE PIPEMASTER

ERIE TOOL WORKS
ERIE, PA., U.S.A.

If you write maker identify as IEN-13957

Protecting - Fabric work gloves plastic treated, comfortable to wear

Source: EDMONT MFG. COMPANY
1226 Walnut St., Dept. IEN, Coshocton, Ohio



Suitable for general application

Plax, to the left in the illustration, is a new cotton work glove impregnated with vinyl plastic. It fits the hand like a dress glove and is suited for handling and assembling small parts. The fabric breathes so the glove is cool to work in. It can be washed without shrinking. It is made in two sizes.

Snorkel, to the right, is a plastic coated glove with a knitted jersey liner. It features flexibility, comfort, seamless work areas and excellent grip, either wet or dry. Curved, preflexed fingers and wing thumb feature the construction and provide a good fit. This glove is available in three styles for men, a fully coated knit wrist, a palm coated knit wrist and a 12-in. fully coated gauntlet, the latter as shown in the illustration.

If you write maker identify as IEN-13958

Filtering - Disc type unit removes contaminants from flow of gas

Source: CHARLES ENGELHARD INC.
850 Passaic Ave., Dept. IEN, East Newark, N. J.

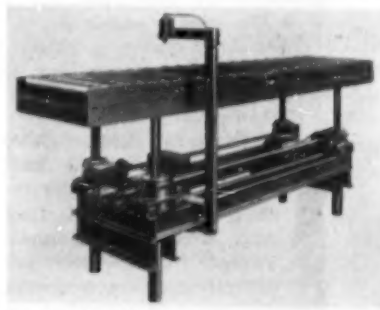
List is $7.50

Traces of liquid or solid particles, carried in a gas flowing to an instrument, are removed by passage through a disc contained in this new filter assembly. The standard design is suited for temperatures to 300 deg. F. A high temperature disc can be specified for service to 1,200 deg. F. Three extra discs are supplied. Pressure drop across a clean disc is 0.2 in. of water at 110 cu. in. per minute.

If you write maker identify as IEN-13959

Elevator - Motor driven table for long steel sheets, mounts in floor

Source: HAMILTON TOOL CO.
905 Hanover St., Dept. IEN, Hamilton, Ohio



Built to order

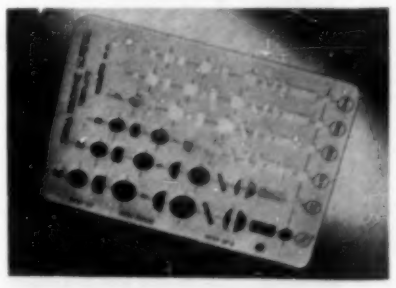
Steel sheets ride the roller conveyor top of this new Portelvator. It has been designed to elevate the sheets into position and to assist in feeding them to a shearing machine. The top measures 28 by 120 inches. The elevator has a lift of 19 in. from a minimum height of 27 in. above the floor.

A rocker arm control maintains constant level as the stack of sheets goes down. Load capacity is 10,000 pounds. Drive is by a 5-hp. motor with worm and gear connection to elevating screws at the four corners of the housing.

If you write maker identify as IEN-13960

Drafting - Transparent template to trace six sizes of machine screw

Source: RAPIDESIGN INCORPORATED
Box 592, Dept. IEN, Glendale, Calif.



List price is $2.50

Machine screws, ranging from No. 6 to 5/16 in., can be traced on a drawing quickly with the aid of this new transparent plastic template. Cutouts in the matte finish plastic are smooth and provide pencil allowance so the tracing is accurately to size. Each size includes fillister head, round head, flat head, standard and Phillips screw drive slots. Root diameters of the screws can be drawn by using the respective cutouts of the small sizes. The template measures 5 by 6⅞ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13961

Viscous Materials FLOW LIKE WATER

through Parks-Cramer Jacketed Pipe and Fittings

You can't find a better way to convey asphalt, rosin, wax, sulphur, gums, syrups, or other high melting point solid or viscous materials than through Parks-Cramer Jacketed Lines.

Steam, hot water, hot oil, or Dowtherm keep the contents in a quick moving liquid state. Plug-ups are eliminated.

Jacketed Cocks and Fittings are cast in semi-steel, Ductile iron, Ni-Resist and many other materials.

Pipes and Fittings are made in standard sizes with 1¼", 1½", 2", 3", and 4" inside diameter, and include Two-way and Three-way Cocks, Tees, Crosses, 90° and 45° Elbows, and Expansion Joints and Strainers, also 2" and 3" Relief Valves.

Write for Bulletin No. 152E

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as IEN-13962

J-M BLAZECRETE* cuts refractory maintenance costs...

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F.

BLAZECRETE* materially reduces labor costs, saves time in building and repairing linings.

For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast, without ramming or tamping. And Blazecrete linings *last.*

Blazecrete comes in three types. All harden on air curing, do not require prefiring. They are furnished as a dry mix—can be stored safely.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

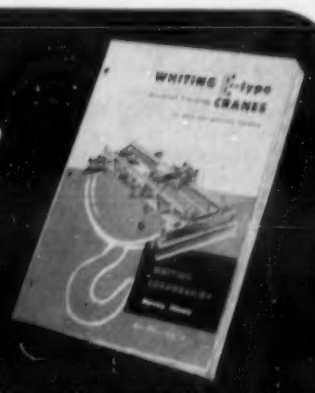
For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN-13963

Get the Facts about...



money-saving, dependable
WHITING "E" TYPE CRANES

Get this 20-page booklet that tells the important story of Whiting "E" Type Overhead Traveling Cranes . . . the greatest dollar-for-dollar handling economy! They are built with the care and precision that marks all Whiting cranes . . . parts are stock and require no individual engineering. These cranes are pre-assembled and shop-tested before delivery to assure top performance. Whiting "E" Type Cranes are ideal for intermittent service for loads up to 15 tons.

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Illinois

Write for this booklet today!

WHITING CRANES

If you write maker identify as IEN-13964

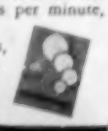
AMEs

...the preferred Dial Indicators

Over 16,000,000 cycles without wear or loss of accuracy . . . how many more will they complete?

Several Ames Model 282 Long Range Dial Indicators *with plain bearings* are currently giving an amazing demonstration of performance and endurance under test conditions. After more than 16,000,000 cycles each, at 240 strokes per minute, 9 hours a day—they still have their original accuracy!

The reasons for this outstanding record? Simply high quality materials, simple basic design, rugged construction . . . and expert craftsmanship.



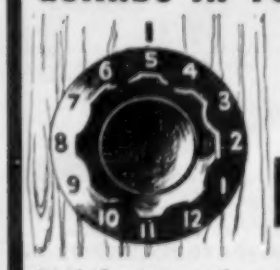
If you would like to have our recommendations on your measurement problem, send blueprints and specifications. And ask for your free copy of our catalog on Ames micrometer dial indicators and gauges.

Representatives in principal cities. B. C. AMES CO. 33 Ames Street Waltham 54, Mass.

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN-13965

AMAZING??—MAYBE, BUT, THIS ELECTRIC LOCKING SYSTEM *COULD* REPLACE ALL THE GUARDS IN YOUR PLANT!



NEW COMBINATION **lectro-lock**

With "Tattle-Tale" Trespass Alarm, Provides Centralized Control Over All Restricted Areas

The Lectro-Locking system is a new and completely different kind of locking system that can be quickly and easily installed on any door, opening or passageway that is to have limited access. Lectro-Locking is ideal for use on laboratories, storage rooms, vaults, tool rooms . . . any place where maximum security is a must. One unit can replace all but one guard in a plant.

100,000 COMBINATIONS

The Lectro-Lock operates automatically and electrically . . . can be opened only by those who know the combination. When anyone leaves your employment, you simply change the combination. No keys to issue . . . no new lock to buy . . . no tumblers to change by a locksmith. There are 100,000 possible combinations, and any one of the combinations can be set in less than 20 seconds. No skill required.

ONE HOUR INSTALLATION

Your maintenance man can install the Lectro-Locking System in less than one hour. Complete instructions and easy-to-follow diagrams show how.

Electronically defies opening by anyone who does not know the combination.

STANDBY BATTERY OPERATION

Automatically operates on battery if A.C. power fails.

AUTOMATIC SIGNAL TO CENTRAL AGENCY

The Lectro-Lock is wired for optional automatic signal to a central alarm system . . . can be wired to record time of entry. And the Lectro-Lock thinks by itself . . . tells when wrong combination is used . . . warns you when someone is attempting to gain entry, by *any means other than proper operation* of the *combination.*

PAYS FOR ITSELF

The Lectro-Locking device will pay for itself through savings on keys, conventional locks, and locksmith bills. Use coupon below for free illustrated booklet. If your business demands maximum security protection, it will pay you to learn more about Lectro-Locking . . . pilfer-proof . . . burglar-proof . . . fool-proof!

Distributor Inquiries Invited

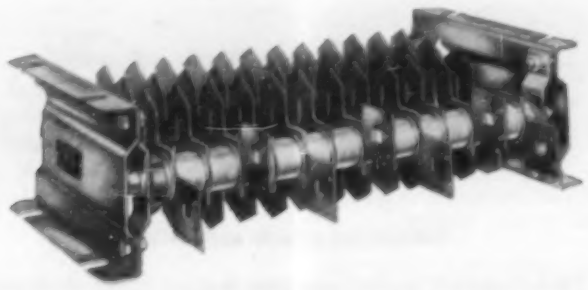
MISSOURI RESEARCH LABORATORIES
2109 Locust Street St. Louis 3, Mo.
Research Consultants and Producers of Electronic Devices

Send me more information about Lectro-Locking.
NAME .....
TITLE .....
NAME OF FIRM .....
BUSINESS ADDRESS .....
CITY ..... STATE .....

If you write maker identify as IEN-13967

Resistor - Grid type assembly for motor starting and control service

Source: CUTLER-HAMMER INC.
329 N 12th St., Dept. IEN, Milwaukee 1, Wis.



Illustrated Bulletin EC-63

Stamped grids, made of chromium steel, are offset to make contact at alternate ends with adjacent plates and the contacting ends are spot welded in construction of this new mill duty resistor. The grids are assembled with end plates that compensate for thermal expansion of the individual grids and the grid assembly. A complete unit can be drawn out from its frame without disturbing other units in a resistor stack, after removing four bolts.

Current capacity is to 180 amp. per assembly in ratings from 0.1 to 10 ohms without paralleling. Insulation is for 600-volt service. Standard lengths are 17, 22½ and 28 in. with two grid patterns of 3 or 5 loops.

If you write maker identify as IEN-13968

Grinding - Flexible shaft machine with motor on caster equipped base

Source: STOW MFG. COMPANY
129 Shear St., Dept. IEN, Binghamton, N. Y.

Finishing wood hull

Number JT-38 is a new flexible shaft machine with a ¼, ⅓ or ½-hp. motor operating at 1,725 or 3,450 rpm. The motor drives a flexible shaft measuring 5 or 6 ft. in length in standard construction. Longer lengths are available on order. A 12-ft. unit is shown in the illustration to drive a 7-in. sanding disc, mounted on an angle head, at 3,500 rpm. The machine can be employed for grinding, sanding, drilling, buffing, wire brushing, polishing.

If you write maker identify as IEN-13969

Motor - Split phase design, totally enclosed, 1/6 to 1/3 hp. sizes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

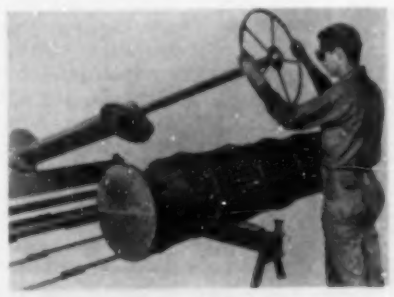
Small size, light weight

Drive for light machine tools and materials handling equipment under severe conditions of dust and dirt are typical applications for this new motor. It is fan cooled and its rotor is mounted on ball bearings designed to absorb heavy thrust loads and to require no lubrication for 10 years of normal operation. A built-in terminal board and accessible base slots assist in installation.

Mounting dimensions are the same as for standard open motors of the same rating in NEMA 48 and 56 frames. Ratings range from 1/6 hp. at 1,140 rpm. to 1/3 hp. at 3,450 rpm. Operation can be specified on 50 or 60-cycle 110/220-volt ac.

If you write maker identify as IEN-13970

Old tubes can be cut out quickly from condensers and heat exchangers by using a new machine known as the Ohmstede Bundle Slicer. The machine mounts an abrasive cut-off wheel with a long movable arm. One man, using the machine, can remove the tubes in an hour and a half where the same job, using conventional methods, required two men for one or more days. The tubes are cut through in steps by bringing the wheel down into the bundle for the full cut depth next to the header and then a few inches away. After removing the cut-off tube pieces, the operator continues to a greater depth until the entire bundle is cut through. Norton Co., 36 New Bond St., Dept. IEN, Worcester 6, Mass., can tell you more about it.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-13971

it's BRAND NEW!

the No. 00

2 TON

PRESS-RITE
POWER PRESS

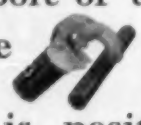
★ Replaces Kick Presses
★ Reduces Work Fatigue
★ Ideal for Stamping and Punching
★ For Assembly and Other Operation
★ ¾" Stroke 1" Optional

The New Press-Rite No. 00 is a heavy duty 2 Ton Press. Engineered for continuous hard service, ideal for stamping and punching smaller parts and secondary operations such as assembly and others. Eliminates many manual operations and reduces operator fatigue. This press will pay for itself quickly. Write for low prices and full information today.

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN-13972

Overhead Work's a Snap!

because you simply 'Snap-Clamp' together, the lightweight ladder panels of Universal's Ladscaf—no need to bolt or use special tools, just Place  and Snap

Ladscaf is positively-locked to effect safe work platforms in any width, any length, or any shape.

Climb stairs? It's easy! Bridge sections easily level by 'Snap-Clamping' to the nearest welded-steel rung (spaced every 12"). Stabilizers assure safe erection of high platforms, swivel back to roll the 2-ft. wide panels thru narrow passageways.

Whatever your lightweight scaffold needs, it's a 'Snap' to save with

UNIVERSAL Ladscaf SCAFFOLDING

You can combine Ladscaf with famous Universal Ezebilt panels and Endlok Pipe-and-Clamp for difficult, unusual jobs.

Distributors offer fast service—See your classified phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as IEN-13974

DON'T BABY THIS SCHRADER BLOW GUN!

Yes, this drop-forged, stainless steel **Schrader Blow Gun** was designed to take the toughest treatment you can give it! Durability? We dropped it out of a tenth-story window . . . ran over it with a six-ton truck—and it still worked perfectly. Combine this ruggedness with its handy hang-up hook, countersunk nose and shielded operating button and you have a blow gun that will give you many years of fine service.

The complete Schrader line includes dozens of types and styles of blow guns, as well as cylinders, valves and all accessories. Get full details. Write today.

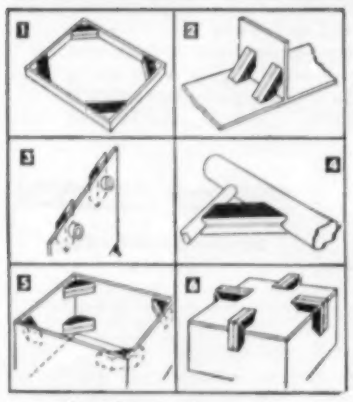
A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

459 Vanderbilt Avenue • Dept. E-36 • Brooklyn 38, N. Y.

If you write maker identify as IEN-13975

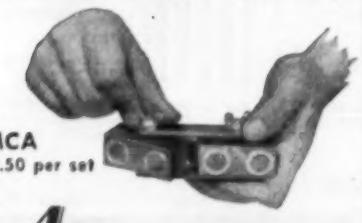
Aronson TWINNER MAGNETIC CLAMPS



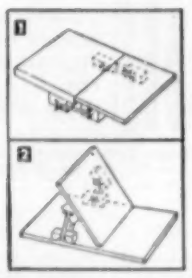
MCP
$14.75 each

MCV
$16.50 each

. . . by the makers of the famous Aronson "UNIVERSAL BALANCE" Positioners



MCA
$9.50 per set



Aronson MACHINE CO.
ARCADE, NEW YORK

If you write maker identify as IEN-13976

20 times more Filtering Area with Nugent Cutting Oil and Coolant Filters

Nugent Pressure Filter installed on turret lathe for filtering cutting compound.

NUGENT Cutting Oil and Coolant Filters provide 20 times more filtering area than other filters of comparable size. This means better filtering — and better filtering means a great savings in lubricants, longer tool life and fewer rejects.

Nugent pressure filters of this type are built in capacities from 1/4 to 350 GPM for any machine that uses oil or cutting fluids.

Write for Complete Information

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS

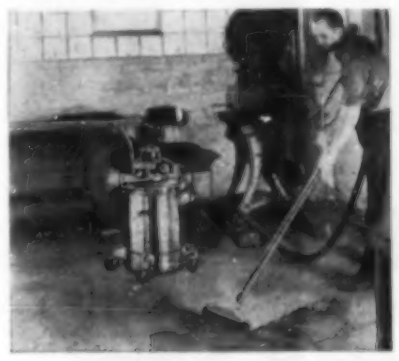
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN-13977

Cleaning - Portable vacuum machine wet or dry pick up, 3/4, 1, 1 1/2 hp.

Source: BREUER ELECTRIC MFG. CO.
5100 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.



Bulletin Form 660

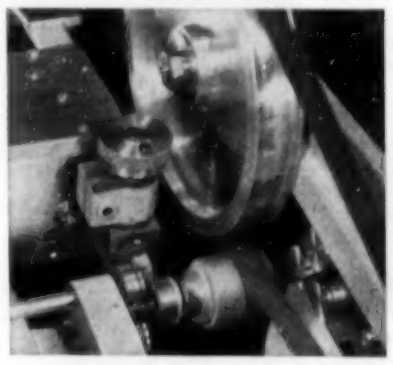
A power unit that can be applied or removed quickly from the tank cover features this new Series-80 vacuum cleaning machine. The unit can be employed as a portable electric blower without the tank, as a pack carried vacuum cleaner, an insecticide sprayer, or an air sweeper to remove paper and debris. It can be fitted to a large size tank cover plate to apply on a 55-gal. drum in connection with a large filter bag, all in addition to regular assembly on the caster mounted 15-gal. tank.

The machine is available in three sizes with 3/4, 1, 1 1/2-hp. motors. It will pick up oil, water and other spilled liquids at speeds to 33 gpm. without requiring any conversion from normal dry operation. The power unit alone is particularly suited for use in congested areas, on stairways, narrow aisles and in parts bins. Metal chips can be picked up and collected for disposal with the machine in normal assembly. Furnace and boiler flues can be cleaned out. Dirt can be removed from overhead fixtures and lines. The machine will pull sludge from machine sumps. It will deliver cleaning sprays.

If you write maker identify as IEN-13978

Lathe - Special machine to turn commutators on small armatures

Source: RIVETT LATHE & GRINDER INC.
22 Riverview Road, Dept. IEN, Boston 35, Mass.



Bulletin 1AL

Model 1AL designates a new special bench mounting lathe to take a run of small motor armatures, to rotate each armature on its own shaft and to machine the commutator to exact concentricity and required diameter. The armature is positioned in the machine on carbide insert V-blocks or on pairs of ball bearings with one end of its shaft against a locating stop mounted on the machine.

A motor driven belt is brought down upon the armature body to rotate it at speeds to 7,000 rpm. after the tool has been set up and the power feed and limit stops adjusted. Distance between supports is adjustable from 2 7/8 to 8 inches. Swing over the bed is 8 in. in diameter. Travel of the tool slide is maximum at 3 in. and of the cross slide is maximum at 1 3/4 inches. Bench space measures 36 by 16 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-13979

Easy to push around . . .

LEWIS-SHEPARD's new, lightweight 2000 lb. capacity pallet truck—Model HPL—rolls free and easy over the roughest floors on factory-sealed wheel bearings that never need greasing. It's a real time and energy saver . . . weighs half as much as standard trucks . . . easy to push around, easy to pull around, even when fully loaded.

WRITE TODAY for facts about the New L-S Model HPL Pallet Truck. Ask for Circular 26A.

The "MASTER" Line

LEWIS-SHEPARD

1812 WALNUT ST., WATERTOWN 72, MASS.

If you write maker identify as IEN-13980

TO ANSWER ALL YOUR QUESTIONS ON FIN-PIPE RADIATION*

write **KRITZER**

*KRITZER BASEBOARD HEATING
KRITZER RADIANT HEATING
KRITZER FIN-PIPE HEATING

See your Jobber for Kritzer Products

IF IT'S KRITZER, IT'S RIGHT, SIR!

KRITZER RADIANT COILS, INC.
2901 Lawrence Avenue, Chicago 25, Ill.

If you write maker identify as IEN-13981

ELEVATE YOUR SMALL PARTS MAGNETICALLY WITH THE MAGNAVATOR

Trade Mark

Small ferrous parts such as pins, nuts, rivets, stampings, are picked up from a tote box A by a magnet B lifted by chain-connected with C. Stripper plate D discharges through chute E and demagnetizer F. Operation is synchronized with other equipment by switch G.

ADVANTAGES:

- Self feeding
- Maintains material level automatically
- Pleasing appearance, portable
- Vertical handling reduces plant space
- Hot parts can be handled
- No jamming
- Each unit engineered to YOUR specific requirements

Send for Catalog 370

Pat. Pending

PRAB CONVEYORS, INC.
19817 E. 9 MILE ROAD ST. CLAIR SHORES, MICH.

If you write maker identify as IEN-13982

For Steam Heated VATS or TANKS

Quickly pays back its cost by eliminating OVER-heating, boil overs, wasted heat and damaged products. Powers No. 11 Temperature Regulator shown above is self-operating, easy to install and gives many years of dependable control. It has an easy to read 4" dial thermometer which indicates temperature of liquid being controlled and makes it easy to adjust regulator for various temperatures. Bulletin 329 describes its points of superiority. Write for a copy. (c12)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in 60 Cities • See Your Phone Book

Over 60 Years of Automatic Temperature and Humidity Control

If you write maker identify as IEN - 13983

CUT COSTS with the *New* MEAD MIDGET AIR CLAMPS

(Spring Return Air Cylinders)

These brand new, tiny Mead Midget Air Clamp Cylinders have only 1" bore. They are made in 3 standard lengths of stroke: 1", 2" and 3"—all with spring return. Like the famous H-1 and V-1 midgets, the new H-1-X models are for use where a little longer stroke is required in a minimum of space. Save countless hours of production time in clamping, locking, releasing, feeding, and in simplified design of work-holding fixtures.

New Industrial Air Power Catalog Ready!

It's full of suggestions for faster, cheaper production! Every plant engineer, production man, purchasing agent needs this Catalog illustrating, describing Air Cylinders, Valves, air-operated Presses, Chucks, Vises, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. Write!

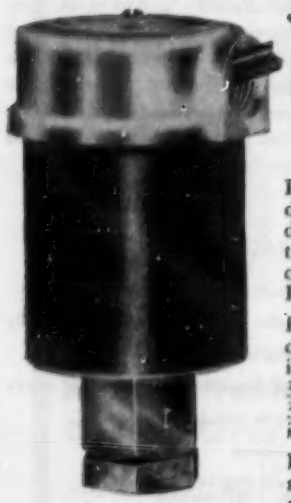
MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. EA-124, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 13984

New! Atkomatic SOLENOID Stainless Steel Direct Lift Valve

to 5000 P.S.I.



Write for Bulletin No. 100

Rugged, simple, compact, heavy-duty, two way valve for broad industrial applications. Assures continuous service, nothing to wear out, has only two moving parts. Instantaneous action.

Features higher pressures, greater corrosion resistance. 1/8 and 1/4 inch pipe sizes, orifices 1/16 to 3/16 inch diameter. Bodies are 303 Stainless, Solenoid armature is 416 Stainless.

Pressures: 5000 P.S.I. to 150° F. maximum, 2500 P.S.I. to 475° F. maximum. Paper insulated coils up to 180° F., glass insulated, silicone impregnated up to 475° F.

ATKOMATIC VALVE COMPANY

545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 13985

POWERFUL AGITATION *Cleans Parts* FASTER BETTER

TURBO BLAST

CLEANING MACHINES

Impeller creates tremendous force to remove grease, oil, carbon, sludge, dirt. No limit to applications. Saves 1/3 to 1/2 on time and cost over other methods.

Model JR 20
(20 gallon capacity)
List price
$214.50
Less gun and basket

OTHER MODELS UP TO 50,000 GALLON CAPACITY

STORM-VULCAN, INC.
2225 BURBANK DALLAS, TEXAS

SEND FOR INFORMATION

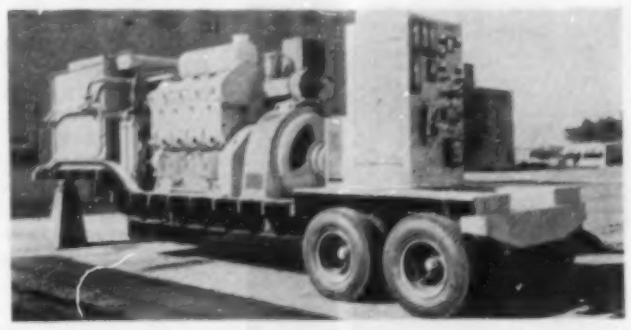
Please send me Turbo-Blast information.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 13986

Generator - Mobile, engine driven, to 1,000 kw., for emergency service

Source: ELECTRO-MOTIVE DIV., GENERAL MOTORS
Dept. IEN, La Grange, Ill.



Bulletins ". . The Problem and . . The Equipment"

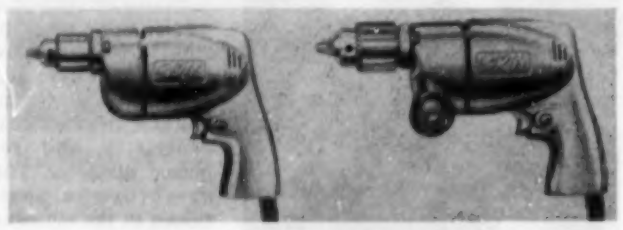
Three assemblies for transportation by railroad, rate 500, 750 and 1,000 kw. in a new mobile design of generator, diesel engine and controls. Two highway units, one of which is shown ready for operation with its housing removed, are intended for travel over the highway. They rate 350 and 500 kilowatts. Single units can be connected together in multiple to provide any desired output capacity. The new line also includes four models of a portable generating plant on skids that can be put on a railroad car or truck trailer. These rate 350 to 1,000 kilowatts.

Major components of the new equipment, such as the engines, are either already in production for use in locomotives manufactured by the company or are so closely related to other standard major components of diesel locomotives, such as generators and car structures, that existing production machinery, methods and labor at the company's LaGrange plant can be immediately switched to the new product. The equipment is intended primarily for emergency and booster duty that can be supplied by the public utilities.

If you write maker identify as IEN - 13987

Drilling - Portable electric tools rate to 1/4 and to 3/8 in. in steel

Source: SKIL CORPORATION
5039 Elston Ave., Dept. IEN, Chicago 30, Ill.



Shafts ride ball and needle bearings

Model 75, to the left in the illustration, is a new 1/4-in. heavy duty drill with standard operating speed at 1,800 rpm. Operating speeds of 2,500, 3,500 and 5,000 rpm. can be specified without additional charge. Optional speeds of 500, 750 and 1,000 rpm. are available at an additional list of $8.50.

To the right is a new standard duty Model 78 for general purpose drilling in steel to 3/8 in. and for wood to 3/8 inch. This tool operates at 750 rpm. and is equipped with an auxiliary side handle. The same type of handle is supplied on Model 75 when it is arranged for low speed operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13988

Check Temperatures Instantly... Accurately with *Alnor* TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision intrument can bring you instant, accurate results.

Here's Why

It's Fast . . . in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within 3/4 of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6 1/2"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13989

To SHELDON CHICAGO U.S.A. *Lathe Owners*

For All Sheldon Lathes less than 5 Years old...we have just published a new Parts List Manual, with:

. . . . every lathe part and sub-assembly illustrated, named, numbered and positioned on explanatory exploded drawings.

. . . . a section which illustrates and describes each of over 50 modern Attachments and Accessories to make your Sheldon Lathe even more versatile, productive and valuable to you.

To get this valuable Parts List (and Accessory) Manual just write (1) the serial number of your Sheldon Lathe and (2) your name, and (3) your firm name and address, on a post card, letterhead, billhead or slip of paper and mail it to "Parts Manual"

SHELDON MACHINE CO., INC.
4208 North Knox Ave., Chicago 41, Illinois

If you write maker identify as IEN - 13990

A NEW STEP IN ECONOMY for screw machine work

This Bokum line-up of stock tools—designed for screw machines and turret lathes—permits you to bore and recess holes faster, more accurately in small parts. *Result:* definite savings in time and money—reduction of costly rejects.

BOKUM TOOL HOLDER

BT-28, 30, 32, 34

Designed for holding Bokum boring tools in turret lathes and screw machines. Cat. 483 (Supp. #1).

BOKUM SHORT NECK TOOLS

Assure tool rigidity in precision boring of short holes. Both H. S. (Cat. HS-500) and carbide tipped (Cat. CT-500).

STANDARD BOKUM THREAD RECESSING TOOLS FROM STOCK

Obtain perfect threads in blind holes for the full depth of the hole. Cat. T-R.

STANDARD BOKUM BACK CHAMFERING TOOLS FROM STOCK

For cleaner, easier cut off without burr. Available (as are thread recessing tools) in sets. Cat. B-CH.

Write Dept. N for catalogs today.

BOKUM TOOL CO. 14775 Wildemere Ave., Detroit 38, Mich.

If you write maker identify as IEN - 13991

MODERN AS TOMORROW!

CAT. NO. 8-2-5

This is the EXECUTIVE by LINEMASTER®

America's Foot Switch Leader

- The Executive incorporates two switches in one, with selective circuits and guaranteed mechanical interlock. It's sleek low-to-the-floor design enables easy and comfortable on-center pivot action; only one circuit can be operated at one time—preventing accidental tripping of two circuits.
- It's the Electrician's dream—only one screw to remove and the switch is ready for wiring.
- Engineers will want to incorporate the Executive by Linemaster into their plans when designing their modern machines.
- Rating (each interior): Single Pole — Double Throw. 20A @ 125V—15A @ 250V

PRICE ONLY **$6.50** list less discount

Size 4" x 4 5/8" x 1 1/4". Weight 14 ounces

Write for Descriptive Bulletin

LINEMASTER SWITCH CORP.

426 WOODSTOCK TERRACE • WOODSTOCK, CONNECTICUT

If you write maker identify as IEN-13992

AIM for preset tension on your steel strapping

Acme Steel offers the only complete line of PNEUMATIC STRETCHERS

These new time-saving Acme Steel Strapping Tools can be set in advance for uniform, consistent tension. There's no guesswork. The Pneumatic Stretchers do the work—reducing employee fatigue. There are Acme Steel Pneumatic Stretchers for tensioning strapping on all sizes and shapes of containers, packages and bundles . . . and a model to suit your needs. For details, write Acme Steel Products Division, Dept. KL-124, Acme Steel Company, 2840 Archer Avenue, Chicago, Illinois.

AIM *for Safe, Lower-Cost Shipping* ACME STEEL

If you write maker identify as IEN-13993

Write for this FREE Catalog...

IT CAN HELP YOU

Lower Production Costs

Tells you how the

BEAD CHAIN

Economical Multi-Swage Method

can supply
TINY TUBULAR METAL PARTS LIKE THESE
for Far Less!

- far less than you can make them yourself by the screw machine or eyelet method.
- far less than you can have them made elsewhere!

If you can use high volume production, try our Multi-Swage method. We can deliver your requirements at a much faster rate . . . and at far less cost! Scrap is eliminated. Deliveries to you are dependably prompt.

We can supply you with parts that are beaded, grooved, shouldered and made with almost any metal. Diameters up ¼", lengths to 1½".

USE THIS CONVENIENT COUPON NOW! You'll get your catalog by return mail

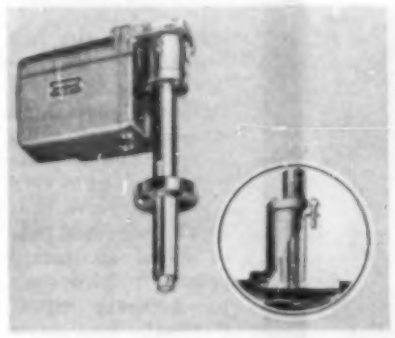
The BEAD CHAIN MANUFACTURING CO., Inc.
59 Mountain Grove St.
Bridgeport 5, Conn.

The BEAD CHAIN MFG. CO., Inc., Bridgeport 5, Conn.
Please send me your catalog of Multi-Swage Parts.
Name
Title
Company
Address

If you write maker identify as IEN-13995

Transducer - Flush diaphragm unit signals pressure for Autronic control

Source: SWARTWOUT COMPANY
18511 Euclid Ave., Dept. IEN, Cleveland 12, Ohio



Bulletin A-713

The diaphragm, to measure fluid pressure with this new Type P3T transducer for the company's Autronic electronic process control, mounts inside a well assembled on a pipe line so the diaphragm surface is flush with the inside line wall. The arrangement permits the diaphragm to move freely but does not restrict process flow and so eliminates stagnant pressure lines previously employed between the flow line and the diaphragm. It permits taking pressure measurements at temperatures to 300 deg. C. in standard construction, or higher on special order with pressure to 2,500 pounds.

Small movements of the diaphragm, in response to pressure change, are transmitted through a rod to a mechanical linkage which actuates the core of a differential transformer. The output signal from this transformer ranges from 0 to 0.500 volts at 60 cycle ac. and is directly proportional to the pressure being measured. It is amplified and transmitted electrically to the indicating and control equipment. The signal is not sensitive to change in pressure of the process fluid.

If you write maker identify as IEN-13996

Truck - Engine driven fork lift with load rating at 1½, 2 and 3 ton

Source: BAKER-RAULANG COMPANY
1250 W. 80th St., Dept. IEN, Cleveland 2, Ohio

Bulletin 1346

Illustrated is Model FG-40, the 2-ton assembly in the company's new Series FG engine driven fork truck. Drive is provided by a Hercules engine operating in connection with a Rockford clutch rated at twice the torque capacity of the engine. There are two speeds forward and two in reverse to maximum forward at 7 mph. with a rated load.

The truck can be operated in 66-in. intersecting aisles when equipped with 36-in. forks. Minimum turning radius is 75 inches. Wheel base measures 48 inches. Maximum width is about 40 inches. Mast height, in lowered position, is 83 inches. The forks lift to 130 in. above the floor line. Lift speed is maximum at 38 fpm. with a rated load. Power is supplied for the lift movement by a hydraulic pump connected to the engine. Pressure in the hydraulic lines is to 1,000 pounds.

The assembly is designed to simplify maintenance. The power axle can be removed in 90 min., the trail axle in 20 minutes. The brakes can be relined in 45 minutes. The clutch can be replaced in 120 minutes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-13997

FOR MAXIMUM VERSATILITY IN SURFACE FINISHING YOUR PRODUCT—FROM ROUGH GLAZE TO MIRROR FINISH!

Specify the
CLAIR Model 202

SURFACE FINISHING MACHINE

Designed for surface finishing flat or contoured products, this double-roll machine provides automatic float of buffs at any predetermined pressure. Hydraulic "in" and "out" stroke is adjustable from 0" to 24", and automatic spray equipment is available.

Write for Bulletin 202

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N.Y.

If you write maker identify as IEN-13998

You Have the World's Best Laboratory for Testing Hoists

Specifications are helpful guides in choosing the right hoist for your job. Factory tests give further assurance. But the hoists on your own job hold the key to your wisest final choice. These hoists have been tested in the world's best laboratory for your purposes. They have been operated by *your* men under *your own* exacting conditions. Their performance takes the guesswork out of choosing. That's why dependable Coffing Ratchet Lever Hoists have been standard in so many plants for more than 25 years.

Examine the hoists in *your* "laboratory." Which is the oldest one in good working condition? When safety is vital, which hoist do your men use? We believe the answer is Coffing — the *original* ratchet lever hoist.

For full information write for Bulletin P128P.

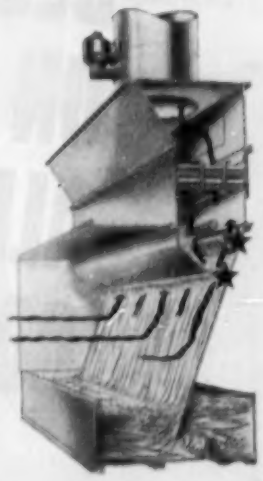
SOLD BY DISTRIBUTORS EVERYWHERE

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Quik-Lift Electric Hoists • Hoist-Alls • Mighty-Midget Pullers • Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys

If you write maker identify as IEN-13999

NEW LOW-COST WATER WASH SPRAY BOOTH



This completely new Binks Style D water wash spray booth will save many dollars for shops interested in lower costs. It costs less to buy, less to operate and less to maintain. A vigorous double washing (see ★★) scrubs overspray from the exhaust air and collects it for reclamation or disposal. Booth and fan stay cleaner longer. The manifold is clog-proof. All parts are easily accessible.

SEND NOW FOR FURTHER INFORMATION

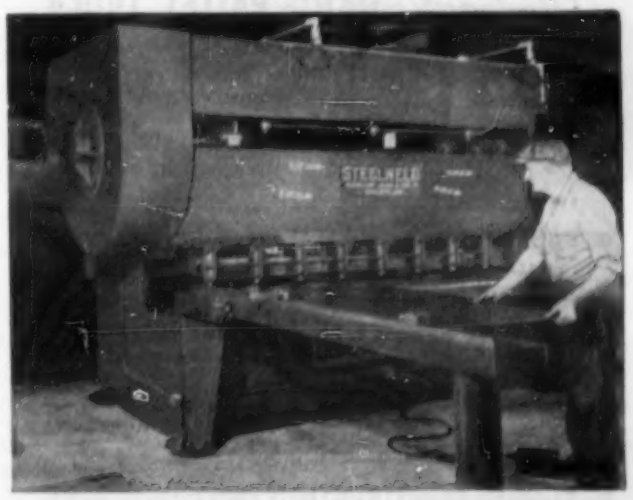
Binks Manufacturing Company
3120-34 West Carroll Avenue, Chicago 12, Ill.

Binks *EVERYTHING FOR SPRAY PAINTING*

GUNS • COMPRESSORS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN-14000



LIKES EASY KNIFE ADJUSTMENT

This shear cuts mild steel, stainless steel, brass, etc., of 28 gauge to ⅛ inch thick in the shop of a perforated metal manufacturer. They like the easy knife adjustment because it enables making sharp, clean cuts without burrs. This is only one of many features that make Steelweld Shears outstanding. A complete line of machines is available for all size plates.

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4229 East 282nd St., Wickliffe, O.

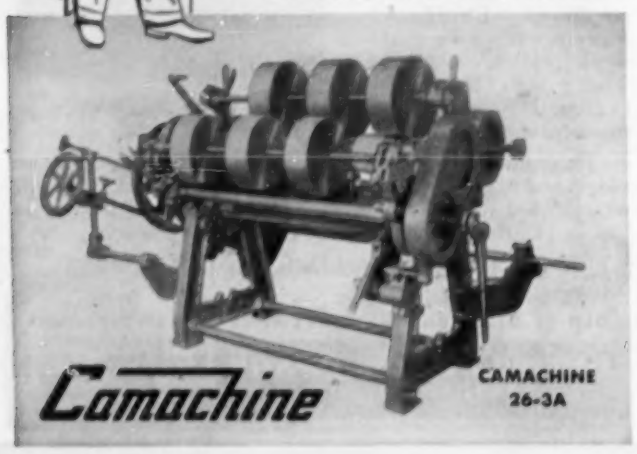
STEELWELD SHEARS

If you write maker identify as IEN - 14001

BETTER rolls

Get the facts on Camachine Model 26-3A slitter-rewinder for fast, low-cost production of better rolls of plain or tacky-coated papers and fabrics. Speeds up to 400 fpm. Strip as narrow as ½" (¼" with special slitters). See other Camachines for other materials.

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn 1, N. Y.



If you write maker identify as IEN - 14002

BEST ON ALL COUNTS

Capacity 2,000 lbs.

RAYMOND *Lightweight*

Hydraulic HAND PALLET TRUCK

- **LIGHTEST WEIGHT** Aluminum alloys reduce weight without sacrificing quality or strength.
- **STRONGEST FORKS** One-piece welded steel construction insures the maximum in overload safety factor.
- **EASIEST TO OPERATE** Foot pedals lift, lower loads. Easy to pull. Effortless pallet entry. (Patented booster roll construction.)
- **LONGEST SERVICE** Proven under years of use —and abuse. Lowest cost in the long run.
- **MOST EFFICIENT PUMP** Backed by over 25 years experience in manufacturing hydraulic material handling equipment.
- **RUGGED CONSTRUCTION** Ram pistons, axles, lever shafts are heat-treated alloy steel. Reinforced handle.

Mail Coupon!

The RAYMOND CORPORATION
3543 Madison St., Greene, N.Y

Give me the facts on your Lightweight Hand Pallet Truck . . . send latest bulletin!

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 14004

Meter - Predetermined delivery of non-corrosive liquids and solutions

Source: NEPTUNE METER CO.
19 W. 50th St., Dept. IEN, New York 20, N. Y.

Bulletin 566-7

New 3-in. size has been added to the Neptune line of Auto-Stop meters to handle flows as high as 300 gpm. The new assembly employs a double trip cushioned valve that slows down rapid flow of liquid an instant before it trips shut for accurate cut-off without hydraulic hammer.

A desired predetermined setting is made by pressing buttons on the face of the meter register and then by turning the reset handle on the right hand side of the register until the main numerals are cleared back to zero. At this point, the Auto-Stop valve is opened and the meter will operate without further attention up to the point of cut-off. Delivery can be stopped at any time by pressing an emergency button and then continued to conclusion or the register can be reset for a new quantity before continuing.

If you write maker identify as IEN - 14005

Jack - Hand hydraulic assembly for utility hoisting, pushing, pulling

Source: EVER-TITE MFG. COMPANY
416 Washington St., Dept. IEN, Davenport, Iowa

About $75

Hydraulic piston rides in a cylinder providing a 27-in. stroke in this new utility jack. The outer end of the piston carries a sheave for a wire rope. One end of the rope is anchored adjustably on the cylinder. The other is equipped with a hook or eye to attach to a load for 54 in. of load travel. Cylinder support is provided by removable base legs. Pressure is applied by a hand operated pump secured to the cylinder base. Load rating is 4 ton. Load movement is ¾ in. per stroke of the pump. Weight complete is 62 lb. of which the base legs account for 25 pounds.

If you write maker identify as IEN - 14006

Rental arrangement, to operate as a tax-deductible current expense or expenditure requiring no capital investment, is offered by Induction Heating Corp., 181 Wythe Ave., Dept. IEN, Brooklyn 11, N. Y. The plan covers a range of electronic induction heating generators with outputs from 1 to 50 kw. on rental rates, with or without option to purchase, that run from $14.78 to $236.25 per month based on a 6-year lease. Rates drop two-thirds thereafter. Short-term leases also available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

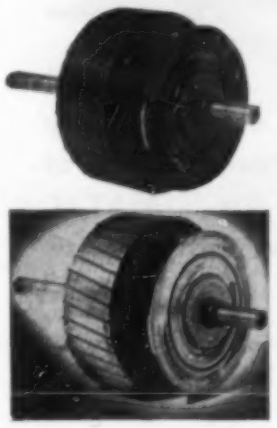
If you write maker identify as IEN - 14007

If you write maker identify as IEN - 14008

CLEANS ELECTRIC MOTORS

WITHOUT DISASSEMBLY . . .

REMOVES DIRT and GREASE WITH FILM-FREE RESULTS



Brulin Solvent Degreaser is harmless to rubber, and because it is a non-conductor of electricity, motors may be cleaned by immersion and by running while immersed. Dirt and grease are removed with no film deposited. Periodic maintenance of motors by cleaning prevents build-up of "varnishes" common in electric motors. Non-toxic and relatively non-inflammable. Ideal for maintenance of motors used in air-conditioning and circulatory systems where air flow deposits dirt and dust due to magnetic attraction.

Write today for more complete information

BRULIN Solvent Degreaser

BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE • INDIANAPOLIS 7, INDIANA

If you write maker identify as IEN - 14009

When it comes to Welding Come to MARQUETTE

For *all* your needs . . . Marquette offers the newest, most *complete* line in the industry today:

Utility AC Welders—2 Models
New "Instant Arc"—the only fully "dead Cabinet" AC Welders—4 Models

AND NOW...

Heavy Duty Industrial AC Welders—6 Models
Rectifier Type DC Welders—5 Models
Gas Driven AC Welder and power Plant Combinations—2 Models
Welding electrodes for all applications
Oxy-Acetylene Welding and Cutting apparatus, Welding Accessories, Fluxes and Supplies

Write for full details today

MARQUETTE MANUFACTURING CO., INC.
307 East Hennepin Avenue • Minneapolis 14, Minnesota

If you write maker identify as IEN - 14010

STAR STAINLESS SCREW CO.
Telephone: Little Falls 4-2300
683 Union Blvd. • Paterson 2, N. J.
Direct New York Telephone: Wisconsin 7-9041

If you write maker identify as IEN - 14011

Bellows Air-Powered COLLET CONTROLLER

- holds and releases bar stock without stopping the machine
- eliminates stock slippage
- compensates for variations in stock size
- eliminates operator fatigue

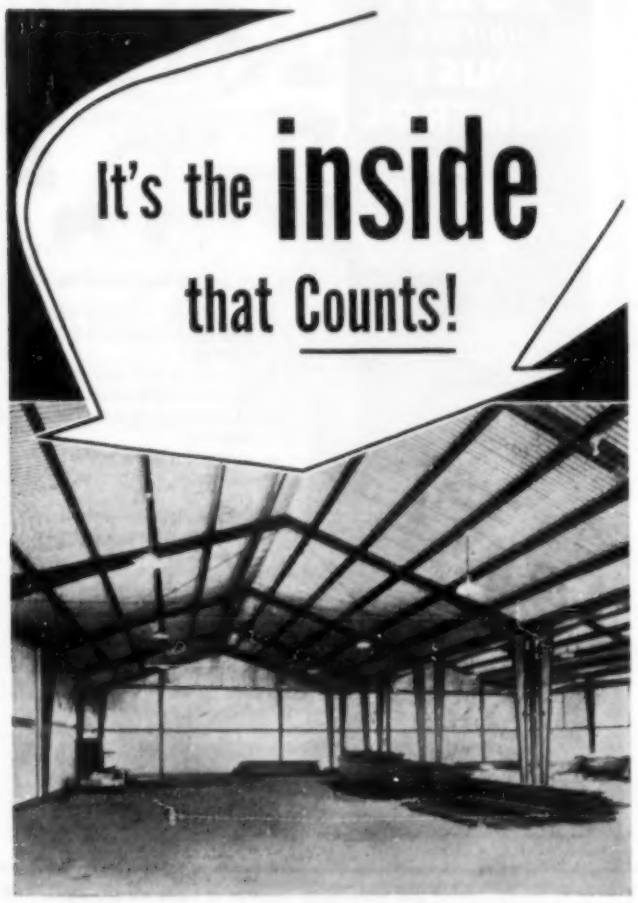
Write for Bulletin BC-60

Bellows Model BCC-60 Collet Controller provides low-cost automatic stock-holding for hollow-spindle lathes and other rotating spindle machines. Mounts on most machines in a matter of minutes — can be controlled manually or interlocked with other equipment for automatic operation. Holding pressure 25 times applied air pressure.

ADDRESS DEPT. IEN1254

The Bellows Co.
AKRON, OHIO

If you write maker identify as IEN - 14012



New 40′ Clear Span Rigid Frame Building

It's headroom and inside space that counts. Get the facts about this new USF prefabricated steel building offering trussless, clear span rigid frame construction, and full 40′ width in any length in multiples of 20′. Truck or regular access doors available at both ends and sides and projected sash may be placed on two levels, sides or ends. Plastic-fibreglas roofing sheet inserts available for extra daylight. It's the fastest erecting big building made.

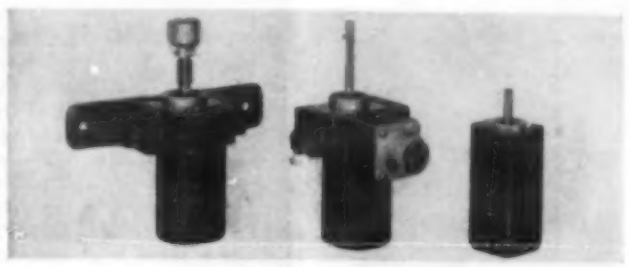
Write Today! Get the complete story on USF 26′, 30′, and 40′ steel buildings.

UNITED STEEL FABRICATORS, INC.
Building Sales Dept.
WOOSTER, OHIO
MANUFACTURERS OF Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Bridge Flooring • Corrugated Metal Pipe

If you write maker identify as IEN - 14014

Motors - Miniature dc. design in three styles for various uses

Source: BENDIX AVIATION CORP.
11600 Sherman Way, Dept. IEN, N. Hollywood, Calif.



For high speed actuator drive

Number 452008, to the left in the illustration, is a new split series 24-volt dc. or 110-volt ac. motor rated at 2.5 in. oz. of torque for intermittent duty to 160 deg. F. It is available for one way or reversible operation. It weighs 13 oz. and measures 3 by 3 by 2½ inches.

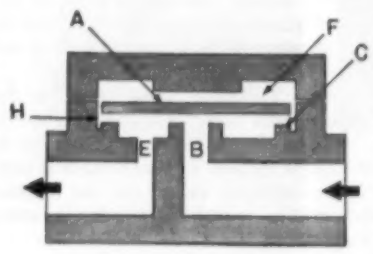
In the center is No. 406046. It is a shunt field 24-volt dc. single direction unit rating 1 in. oz. for continuous duty to 160 deg. F. It employs a thermistor in the field to compensate for temperature effect on the motor speed. This motor weighs 13 ounces.

To the right is square No. 1007690, a split series 24-volt dc. motor rating 4 in. oz. on intermittent duty to 165 deg. F. It can be specified for one way or reversible operation and can be equipped with a magnetic brake. It measures 2 in. in length by 1 in. in square section.

If you write maker identify as IEN - 14015

Trap - Thermodynamic design operates on any pressure to 600 pounds

Source: SARCO COMPANY
350 Fifth Ave., Dept. IEN-P, New York 1, N. Y.



Bulletin 255A

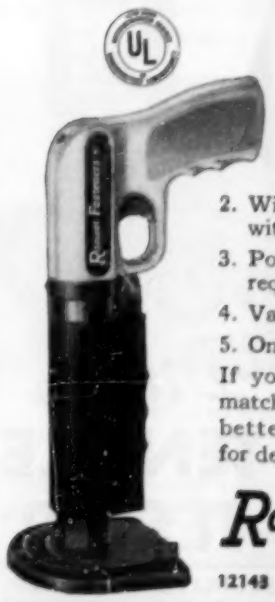
Air and condensate, entering this new trap, pass upward through a port B to act on the under face of a flat circular stainless steel disc A. The upward pressure raises the disc and permits flow to continue to the outlet side through E until steam enters the trap. The greater velocity of the steam causes it to strike against the outlet side H of the chamber containing the disc. This builds up pressure in the chamber F above the disc and causes it to seat and stop the flow until the pressure is decreased by condensation. At this point, the disc again is lifted and the cycle is repeated once more.

The trap employs a body made of semi-steel, cast carbon steel or alloy steel for maximum pressures to 300 and to 600 lb. and for temperature ranging from 450 to 950 deg. F. Threaded socket weld and flanged designs are included in the line. Three sizes are ½, ¾ and 1 inch. The 1-in. unit, in threaded design, measures 4¾ in. from inlet to outlet by 3½ in. in width by about 4 in. in height. In the actual construction, inlet and outlet inserts and a seat insert, as well as the disc, are made of stainless steel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14016

Ramset VERSATILITY pays big dividends!



To give you the greatest speed, ease and economy when fastening to steel or concrete, only RAMSET SYSTEM offers:

1. Choice of 3 JOBMASTERS for light, medium or heavy-duty work
2. Widest range of Tru-Set Fasteners with 65 sizes in 6 types
3. Power charges matched to power required
4. Varied line of special accessories
5. On-your-job service by nearby dealer

If you are not profiting by this unmatched versatility of RAMSET SYSTEM, better ask your dealer or write us for details.

Ramset Fasteners, INC.
Ramset Division, Olin Industries, Inc.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING — AN Olin PRODUCT

If you write maker identify as IEN - 14017

Step Up Production and Safety, Too with Schrader Air Ejection

You're losing production when operators must manually unload work from your presses. Extra work takes time, and adds hazards to the job.

A Schrader Air Ejection Set will give your presses—and operators—a new lease on life. Fully automatic, these sets deliver enough air to eject the part, but no more. They are actuated by cams or trippers, and are delivered to you ready to install.

Various sets are available to handle any ejection problem.

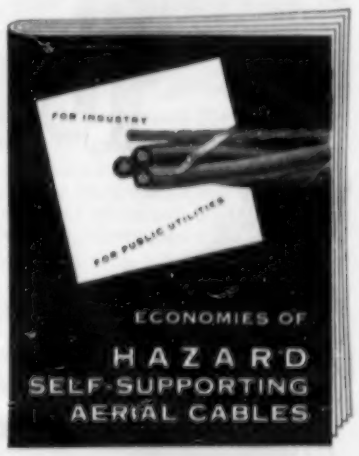
Get full details on Schrader Ejection Sets. Write today for the Schrader catalog.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
459 Vanderbilt Avenue • Dept. E-39 • Brooklyn 38, N. Y.

If you write maker identify as IEN - 14018

Q. Where can I get the full story on Self-Supporting Aerial Cables?

A. You'll find the entire story in the new Hazard Self-Supporting Aerial Cable Book—complete with comparative installation costs, case histories and full technical data.



Write today for your copy of this book (Bulletin H-458) to Hazard Insulated Wire Works, Division of The Okonite Company, Passaic, N. J.

HAZARD insulated cables

2568

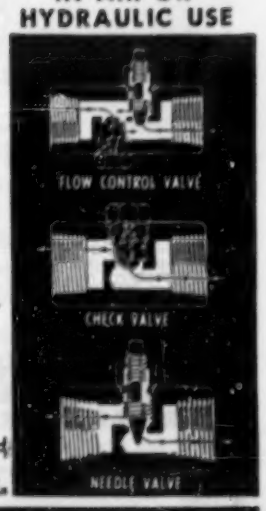
If you write maker identify as IEN - 14019

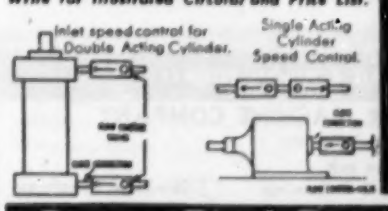
Get Easier, More Accurate Cylinder Speed Control with Pneu-Trol VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 5 remote pipe sizes — ⅛" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





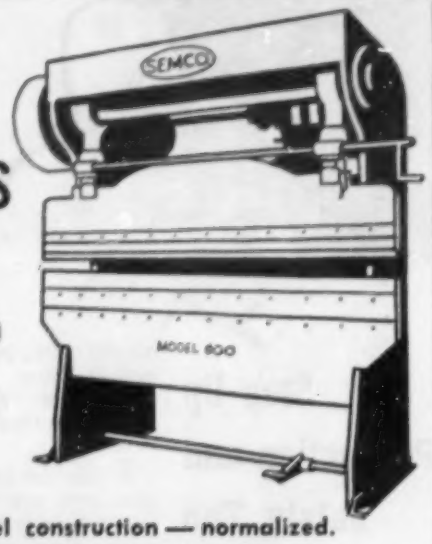
Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 14020

NEW PRESS BRAKES

in four sizes 6', 8', 10' and 12' 30 to 60 ton.

• LOW PRICED • BIG PRESS FEATURES



- All steel construction — normalized.
- Ball and Roller Bearings throughout.
- Fine adjustment of ram.
- Heavy pitmans with buttress threads.

Made by the makers of famous SEMCO "35 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

SEMCO

SERVICE MACHINE CO., INC.

200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 14021

BUILT TO LAST...

O-M CYLINDERS

(air • hydraulic)

Designed and engineered with the user in mind, O-M Cylinders embody every essential construction and mechanical feature to assure trouble-free performance and long service.

They are built of steel with bearing surfaces of bronze—precision machined with modern equipment.

Cylinder bores are honed to a fine finish, and the hi-tensile piston rods are polished to give long life and smooth performance.

Effective O-ring static seals are backed up to prevent extrusion under high pressures. All packings are self-adjusting and are carefully selected for proper usage.

A rigid inspection at the factory is your guarantee of peak performance.

O-M Cylinders fit where others won't because O-M special interlocking mechanism eliminates bulging tie rods and end caps.

Available in a full range of sizes (1½" to 8" bores) with standard, 2 to 1 or oversize rods. *14-day delivery on most sizes.*

Write today for FREE catalog and complete set of ½ and ¼-scale templates showing all cylinders and mounting brackets.

MAIL COUPON TODAY!

ORTMAN-MILLER MACHINE COMPANY
5 143rd Street, Hammond, Indiana

☐ Have representative call
☐ Please send latest O-M Catalog ☐ Complete Templates

Name _____ Position _____
Company _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 14023

Soldering - Low temperature flux applies to assist in silver soldering

Source: FARRELLOY COMPANY
1249 N. 26th St., Dept. IEN, Philadelphia 21, Pa.

About $1.50 per pound

Scavenging action, provided by this new AG flux, acts on silver solder to minimize the time lag between fluidity of the solder and its adherence to the parent metal. It also increases spreading action of the solder and tinning coverage to conserve silver. It reduces porosity to make a clean joint and can be applied successfully in a wide range of heat so little skill is required for its use. The flux breaks the oxide on copper aluminum alloys and is suited for use on stainless steel, Monel Metal, nickel, copper, brass, bronze and plain steel. Residue can be removed by washing with hot water.

If you write maker identify as IEN - 14024

Elevator - Power lift fork design, portable, to stack 1 ton pallet loads

Source: RAYMOND CORPORATION
31-128 Madison St., Dept. IEN, Greene, N. Y.

Details on request

Two batteries, rating 6 volts each for 125 amp. hr. duty, are wired in series to provide 12-volt dc. power for lift movement on the forks of this new Pallet Stacker. An automatic battery charger is part of the standard equipment. It can be plugged in when the unit is not being employed.

The base arms straddle the forks and both are adjustable in width. Fork length is 36 or 40 inches. The new units is particularly suited for use in temporary storage areas, in outside warehouses and in open areas where electric service is not available.

If you write maker identify as IEN - 14025

Universal fatigue testing machine, rating 100,000 lb., is announced by Baldwin-Lima-Hamilton Corp., Paschall Post Office, Dept. IEN, Philadelphia 42, Pa. The new machine will have a table measuring 12 ft. in length by 6 ft. in width. Testing speed is 1,500 cycles per minute. Maximum movement of the vertically reciprocating 14 by 14-in. platen is ½ inch. Controls and contactors are in separate cabinets. Inertia forces are balanced by cantilever springs. Deflection of the preload springs is controlled by an electronic circuit using a differential transformer to sense the spring position. Preload can be adjusted while the machine is running, using an indicator that reads in thousandths of an inch of spring deflection. The machine is known as Type SF-100-U.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14026

Precision

built throughout for ease and speed in operation. Fully portable. Will make TENSILE, COMPRESSION, TRANSVERSE and SHEAR tests. Motorized or hand operated. Calibrated with Morehouse Proving Ring for accuracy. Maximum hand, self-aligning jaws, ball bearing throughout. Tests any type material, rounds, flats, special shapes.

Immediate delivery! Capacities from 0-250 lbs. up to 0-10,000 lbs. America's most popular low priced tester! Hundreds in use by leading plants.

Dillon TENSILE TESTER

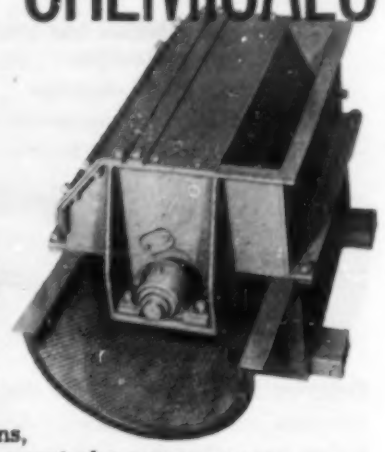
"WRITE FOR PROFUSELY ILLUSTRATED BULLETIN"

W. C. DILLON & CO., Inc. 14620K Keswick St. Van Nuys, Calif. (Sub. of Los Angeles)

If you write maker identify as IEN - 14027

FOR LUMPY CHEMICALS

it's a PRATER POWER SCREENER



If your raw materials become caked due to moisture conditions, here's an easy, economical way to restore their original free flowing, crystalline qualities. A Power Screener will do the job quickly and at a fraction of the cost of hand screening or lump breaking.

SAVE TIME • SAVE LABOR • ASSURE UNIFORMITY

with a Prater Power Screener. Get our descriptive folder today.

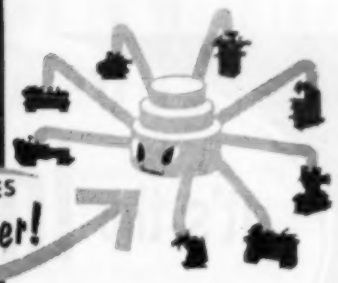
PRATER PULVERIZER CO.
1536 S. 55th Court Chicago 51, Ill.

PRATER

If you write maker identify as IEN - 14028

TORIT UNITIZED DUST CONTROL

ELIMINATES *the Spider!*



With Torit Unitized Dust Control You...

- ✓ get custom installed units tailored to each dust creating machine.
- ✓ eliminate bother, expense and overhead of centralized control.
- ✓ operate units only when necessary.
- ✓ eliminate waste of power and suction by machines not operating.
- ✓ eliminate the dust problem at its source . . . where it should be stopped.

Furthermore, Torit designs these units to suit *your* requirements. No matter what your dust problem, Torit can solve it.

Our engineers will be happy to call on you, without obligation on your part, to show you how you can use Torit Unitized Dust Control to your advantage in plant efficiency and ultimate profits.

See our catalog in Sweet's Machine Tool File, or write:

TORIT MANUFACTURING COMPANY
286 WALNUT STREET, ST. PAUL 2, MINN.

If you write maker identify as IEN - 14029

MELRATH GASKETS

DRUM PLUG GASKETS

Made from any desired material or combination of materials. Resilient — tightened with little torque — remain tight under all temperature changes. For gasoline, kerosene, benzol, alcohol, fuel oil, lubricating oil, paraffine, paint, lacquer, dye, chemicals, etc.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 14030

Hammond 1" FLEXIBLE BELT GRINDER

$74.50

Less Motor and Abrasive Belt

10½" THROAT DEPTH

MODEL F-1

DEBURRING

GRINDING

POLISHING

Here is the answer to costly hand filing and costly grinding, polishing and deburring. Deep throat opening of 10½" permits finishing of irregular shapes and hard to get at areas.

Low in cost, but built up to Hammond standards. Not a "home workshop" tool.

You will be AMAZED at the uses you will find for an F-1, and how soon it pays for itself.

Hammond Machinery Builders

1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

If you write maker identify as IEN - 14031

TURN PIPE DREAMS INTO PIPE BENDS

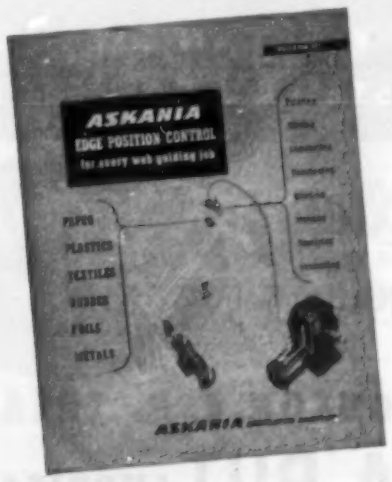
Pipe, tube and structural bending is now simplified with a PEDRICK PRODUCTION BENDER. Heretofore difficult bends, such as offsets and off-plane bends, can now be made in production quantities at an amazingly low cost. ALL PEDRICK PRODUCTION BENDERS are complete with motor, and are equipped with automatic duplicate bending relays.

Write for Descriptive Folder, Dept. 7
Prices start as low as $1575.00

(Motor and all Electrical Equipment included)

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 14032



ASKANIA EDGE POSITION CONTROL for every web guiding job

This new 12-page book describes Askania Edge Position Control, the modern control for every web guiding job. Suitable for nearly every kind of material, from light scrim and fragile tissue to steel strip. Only a breath of air touches the controlled material—yet force and speed available for correction are practically unlimited. The system is simplicity itself—easy to install, easy to maintain.

Write for your copy of Bulletin 161.

ASKANIA REGULATOR COMPANY
280 E. Ontario Street Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp.

If you write maker identify as IEN - 14033

Buildings - Fire resistant sheet is translucent for use in skylights

Source: RESOLITE CORPORATION
Route 19, Dept. IEN, Zelienople, Pa.

Ask for data on Fire-Snuf

Hetron, a self-extinguishing resin, is reinforced with fiberglass in the construction of this new translucent corrugated sheet. The new material will burn under the heat of a blow torch but extinguishes itself immediately upon removal of the torch. It is intended particularly for use in skylights in industrial buildings, commercial buildings, schools. The sheet is molded in standard roofing and siding corrugations and sheet sizes. It costs a little more than the company's standard polyester resin sheet.

If you write maker identify as IEN - 14034

Numbering - Wheel type stamp, consecutive, duplicate, repeat action

Source: WM. A. FORCE CO.
220 Nichols Ave., Dept. IEN, Brooklyn 8, N. Y.

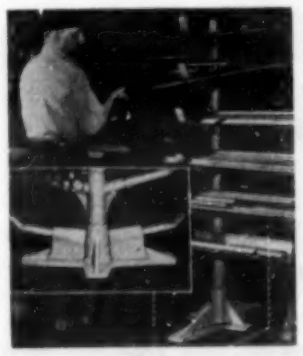
Clear impression

Application for this new Model-1C hand operated numbering machine is with carbon snap-out forms. The unit employs a hard rubber impression bed and a rubber base for quiet easy operation. It carries sharp face $\frac{3}{16}$-in. Gothic figures on six wheels. It can be set for automatic action consecutively, in duplicate or repeat.

If you write maker identify as IEN - 14035

Storing - Attachment brackets add to capacity of Quick-Serve rack

Source: BROWN ENGINEERING CO.
123 N. 3rd St., Dept. IEN, Reading, Pa.



Bulletin 26

New bracket is available in pairs, for bolted application on the base of the company's standard Quick-Serve sectional stock rack, to mount two additional stock supporting arms standing 10 in. above the floor. Heavy materials can be stacked in stable manner on these arms, adding to the rated capacity of the rack. The brackets can be specified on new rack assemblies or can be supplied for application in the field on racks now in service.

If you write maker identify as IEN - 14036

Truck - Battery powered vehicle to transport personnel and packages

Source: BEALL MFG. CORP.
1610 Kalamazoo, Dept. IEN, Grand Rapids 8, Mich.

Saves time and effort

Two passengers can be carried in seated position on this new Red-Cap Widgit truck. In addition, 5 cu. ft. are available for packages, mail, small parts. The truck is equipped with positive hydraulic brakes. It operates at two forward speeds with finger tip control at the steering handles. The single front wheel permits turning in the truck's own length when desired.

Overall dimensions are about 60 by 30 inches. Construction includes a tubular steel frame, diamond steel deck, fabricated steel body panels, red fibre glass hood ahead of the steering column and red plastic upholstered seats. The metal parts are finished in yellow.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 66

If you write maker identify as IEN - 14037

NOW... a NEW LINE of Oilgear VARIABLE DELIVERY PUMPS

for applications up to 3 h.p.

Oilgear announces a new line of extremely versatile one-and two-way variable delivery pumps for straight-line and rotary applications. These are heavy duty "package" units that simplify linear and rotary drive systems . . . cut engineering, installation and maintenance costs . . . set new standards of dependability and performance and increase user acceptance. A type "A" pump, a cylinder and two pipe lines or a type "A" pump, Oilgear motor and three pipe lines complete the system. No auxiliary equipment is required. Seven standard, integral controls are available.

Write for free copy of new 8 page Bulletin 47010 that illustrates many representative pump and system circuits and typical applications. Write today. THE OILGEAR COMPANY, 1567 W. Pierce Street, Milwaukee 4, Wis.

If you write maker identify as IEN - 14038

. . . and Carpenter Stainless Tubing made the difference.

FOR PRODUCTION EQUIPMENT—ten cooling coils like this were made from Carpenter Stainless Tubing at a saving in material of about $1000 because uniform walls permitted a lighter gauge.

GET THESE NEW FACTS!

Just off the press is the new Carpenter Condensed Data File. Packed with facts on properties, corrosion resistance, weights, dimensions. Tells the story of Carpenter quality—Carpenter uniformity. Write for your copy, *today.*

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

If you write maker identify as IEN - 14039

Send for a trial order of

CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling . . . all bugaboos in modern machining work. This trial order will start *you* on *your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company }

Name _____

Company Name _____

Address _____

City _____ State _____

Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

If you write maker identify as IEN - 14040

The "SAF" Pillow Block is SKF's answer to dirt problems:

- triple-seal rings give three-fold protection in dirt-gathering locations; seal out foreign matter; seal in oil or grease; self-aligning.
- special stabilizing rings between housing shoulder insure fixed position of shaft in bearing during operation.
- types for light, normal and heavy duty.

Write SKF Industries, for complete details, or contact your SKF Distributor. SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. —*manufacturers of* SKF *and* HESS-BRIGHT *bearings.*

If you write maker identify as IEN - 14041

High Efficiency Deaerator at LOW COST

Cochrane UNI-PAC* DEAERATOR

for small and medium size plants

- Guaranteed to deliver zero oxygen water.
- Factory assembled.
- Completely self-contained.
- Easy to install.
- Minimum piping required.
- Wide range of heater sections, storage tanks and accessories to meet any plant requirement.

Now, you can have *zero oxygen* feedwater for your boilers at a cost within reach of the smallest plant!

The Cochrane UNI-PAC DEAERATOR delivers water heated to the saturation temperature of the steam used with a guaranteed zero oxygen content as determined by accepted tests (less than 7 parts per billion).

The UNI-PAC DEAERATOR is designed for either right or left hand installation, and in a wide range of outlet and storage capacities.

For complete details of the UNI-PAC DEAERATOR, *use the coupon below.*

*Trademark

Cochrane CORPORATION

3152 N. 17TH STREET, PHILADELPHIA 32, PENNSYLVANIA

C100.5

COCHRANE CORPORATION
3152 N. 17th St., Philadelphia 32, Pa.
Please send me a copy of Publication 4643 on the Cochrane UNI-PAC DEAERATOR.
NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

If you write maker identify as IEN - 14043

Fabricating - Steel channel and fittings to build shop structures

Source: M-H STANDARD COMPANY
515 Communipaw Ave., Dept. IEN, Jersey City 4, N. J.

Versabar Bulletin

Bright zinc coating as the standard finish, in place of enamel, and a new lateral locking nut are recent developments in the Versabar line of steel channel and fittings, previously described IEN-9363-53. The channel is made of rolled steel and is available in three section sizes from 1⅝ by 1⅝ by 14 gage to 1⅝ by 1 11/16 by 14 gage. Length is standard at 20 ft. and can be cut as required.

Standard fittings are carried in stock with which to build a range of racks, pipe and wiring supports, frames for machinery, furniture and small structures. The new lateral locking nut engages both sides of the channel lip to prevent spreading the channel when the nut is tightened. The nut itself carries a spring staked into an annular groove. This spring holds the nut in position prior to assembly.

If you write maker identify as IEN - 14044

Scaffold - Wheel mounted assembly equipped with a flat tread stairway

Source: SAFWAY STEEL PRODUCTS INC.
6234 W. State St., Dept. IEN, Milwaukee 13, Wis.

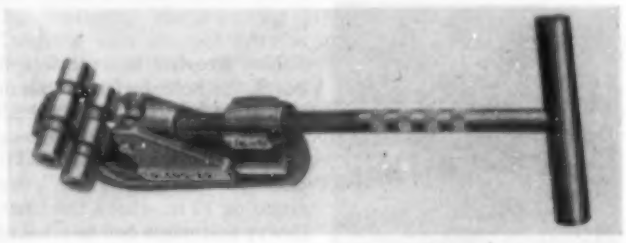
No ladders

Hook-on stairway units are now available with flat safety type treads to apply in the company's tubular steel sectional scaffold for assemblies such as that shown in the illustration. A worker can walk up and down carrying work and tools in both hands. The scaffold can be built in desired sizes using combinations of the standard sections.

If you write maker identify as IEN - 14045

Cutting - Wheel type hand tool for pipe measuring 1/8 to 2 inches

Source: TOLEDO PIPE THREADING MACHINE CO.
1445 Summit St., Dept. IEN, Toledo 4, Ohio



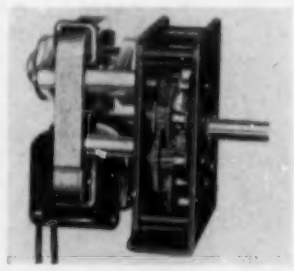
Malleable frame and alloy steel cutter

Six rolls back up and cradle a pipe that is being cut with this new hand tool. They prevent spiraling when the tool is used with a power drive. The tool mounts a cutting wheel on a slide head that is fed into the pipe by turning the handle as the tool is rotated around the work.

If you write maker identify as IEN - 14046

Motor - Shaded pole design rates 60 inch pound torque at 1 rpm.

Source: NEW ENGLAND GEAR WORKS
South End Road, Dept. IEN, Southington, Conn.



For appliances

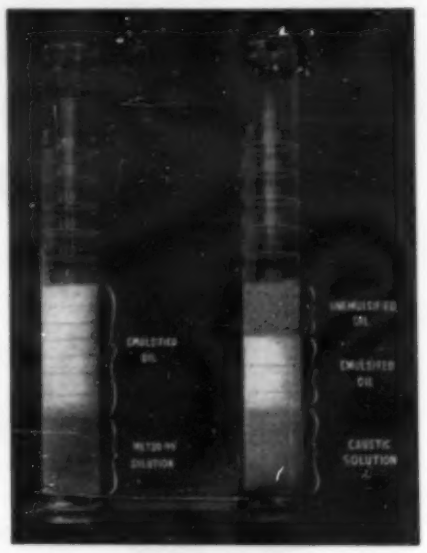
Open design, as shown in the illustration, or design in which the rectangular gear housing is closed in, can be specified for this new Model MD two-pole shaded pole motor. Operation is on 110-volt 60-cycle ac. Any single output speed can be specified between 1/4 and 426 rpm. Overall dimensions of the enclosed unit are 3 3/16 by 3 1/8 by 3⅝ in., the latter not counting the ⅜-in. shaft extension.

Construction employs hardened-steel generated gears, pinions and shafts with felt oil reservoirs and oil impregnated bronze bearings. The gears operate quietly and with minimum friction loss. The motor is equipped with die cast bearing brackets, self-aligning oilless bearings and insulated connecting leads measuring 3/16 in. in length. An internal fan draws cooling air through the windings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14047

How Metso Silicate Detergents remove oil films



The Metso solution (in left hand tube) breaks up lubricating oil into small globules and completely suspends them. In tube on right note that the alkaline solution does not completely emulsify oil. Thus oil on top would stick to clean articles as removed from the bath.

Write for folder on 24 cleaning operations using Metso.

Philadelphia Quartz Co.
1131 Public Ledger Bldg.
Philadelphia 6, Pa.

metso® detergents
PQ® SOLUBLE SILICATES

If you write maker identify as IEN - 14048

DIELECTRIC STRENGTH TESTING INSTRUMENTS

. . . from a handful
. . . to a shop full!

You name it . . . ARI either has it, or can build it for you promptly from sound design and long experience with virtually every known type of high potential dielectric strength testing instrument.

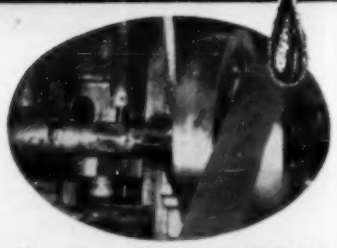
Standard "Hypot" Juniors range from 0-1500 volts to 0-6000 volts. Large mobile Hypots available to 50,000 volts, 5 KVA. **Write for data today!**

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1938"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 14049

OIL YOU CAN SEE . . . IS WASTE YOU CAN STOP!

Stop waste WITH



HOUGHTON E. P. TREATED STA-PUT LUBRICANTS

. . LESS OIL . . LESS OFTEN! Houghton Sta-Put Lubricants *stay put* where they're needed—cling tightly to metals—offer extraordinary adhesion. They give you film strength many times higher than that of ordinary lubricating oils. They keep your equipment running longer . . with greater safety . . . on less! Write for data on "Sta-Put" Oils and Greases, to E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

STA-PUT LUBRICANTS
. . . products of HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO
Ready to give you on-the-job service . . .

If you write maker identify as IEN - 14050

the modern answer to industrial

NOISE

... new M·S·A ear protection

M·S·A EARSAVER

M·S·A NOISEFOE

Developed by years of research, these over-the-ear protectors provide that all-important seal with the wearer's face that assures effective noise attenuation. Such protection comes in two forms:

1. M.S.A. Earsaver, cotton gabardine peaked cap assembly for persons exposed continuously to a relatively high noise level. Available in three cap sizes.
2. M.S.A. Noisefoe, a head-set suspension type that is easy to put on, take off, for persons entering noisy areas for brief intervals, then returning to a normal environment. One size insures universal fit.

Both models are light and comfortable. Write for details.

ALSO—M.S.A. EAR DEFENDERS, lightweight, molded plastic, for inserting in the ears. Provide perfect closure of ear canal. Comfortable.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.

76 Branch Offices in the United States

If you write maker identify as IEN - 14051

RIGHT OR LEFT BENDING to small or large radii? it's easy on a

WALLACE NO. 800 2" SEMI-AUTOMATIC RIGHT AND LEFT ROTARY TYPE HYDRAULIC BENDING MACHINE

Accurate, precision bends of 180° in either direction.

Bends up to 2½" O. D. light gauge steel tubing— 2" O.D. heavy gauge steel tubing.

Minimum time for die change-over from right to left hand bending—with dual control levers for operator's convenience.

Combination die blocks with four different O.D. diameters on each set of blocks.

Toggle handles for easier clamping of tubing in clamp and pressure arms of bending form.

ALL THIS AND MORE IN ONE BENDING MACHINE

Write for Bulletin 36 — Section O

WALLACE SUPPLIES MFG. CO.
1308-12 Diversey Parkway Chicago 14, Illinois

If you write maker identify as IEN - 14052

EVEN THE BEST CAN BE IMPROVED

Gerotor offers its New QDB series of small capacity pumps as proof!

Gerotor has redesigned its series of small capacity pumps to give even more . . .

- FLEXIBILITY—the QDB can be operated in either clockwise or counter-clockwise direction by simply changing the position of one internal plug!
- RANGE OF APPLICATION—the QDB can be obtained with an extended shaft to operate another pump in tandem, off of one motor!
- DEPENDABLE SERVICE—the QDB is built to give more dependable service over a longer service span than any comparable pump. Its longer life reduces your maintenance and replacement costs.

If you have need for pumps in the QDB range, call on Gerotor.

Gerotor makes a complete line of hydraulic pumps in ranges from .4 g.p.m. to 40 g.p.m. The Gerotor engineers can help you solve your hydraulic pump problems. Write for *free literature* and full particulars.

Check this Capacity Table

Type	Delivery g.p.m.—1800 r.p.m. Discharge Pressure p.s.i. 0	250	500	750	1000
QDB .4	.42	.40	.38	.35	.31
QDB .75	.84	.80	.78	.73	.66
QDB 1.5	1.67	1.62	1.57	1.50	1.42

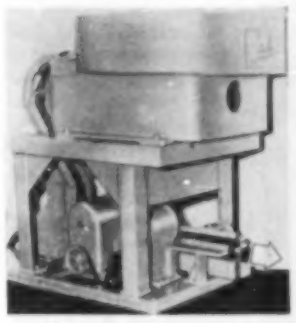
GEROTOR MAY CORP. - Box 86 - Baltimore 3, Md.

GEROTOR
HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 14053

Feeding - Automatic machine feeds bearing races to a grinder

Source: KRAUS DESIGN INC.
955 Exchange St., Dept. IEN, Rochester 8, N. Y.



Prices on request.

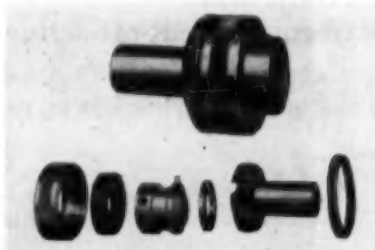
A stacking device in this new automatic Thru-Feeder takes bearing races from a Centrifeed hopper with their axes parallel. It arranges them with the axes aligned and feeds them into a dual pair of discs. These discs carry the parts to the grinder work rest and, by maintaining a constant and predetermined pressure, hold squareness and taper requirements.

The feeder applies on a centerless grinder. It employs carbide wear inserts on its four guide rails. Two models will take races or similar parts from ⅜ to 1¼ in. in diameter or from 1¼ to 3 in. in diameter. Production rate can be set to coincide with the feed rate of the centerless grinding machine.

If you write maker identify as IEN - 14054

Reaming - Floating holder compensates for any tool misalignment

Source: GREEN MFG. COMPANY
Dept. IEN, Rockton, Ill.



Prices on request

Float sleeve, made of synthetic rubber, is employed in this new reamer holder to compensate for angular and for parallel misalignment between a machine spindle and its turret in order to hold concentricity when reaming a hole. The rubber also acts to cushion the tool and eliminate chatter. It guards against tool-breaking shock.

Long or short shank reamers can be held. Positive drive is by a floating U-shaped key. An adjusting nut permits setting sleeve pressure to compensate for over-hung weight of the tool.

If you write maker identify as IEN - 14055

Hoist - Inverted pneumatic "climbs" wire rope with 150 lb. load

Source: KELLER TOOL CO.
Parks St., Dept. IEN, Grand Haven, Mich.

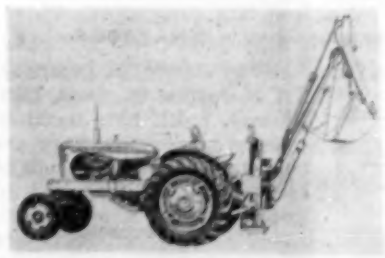
Will not overload

Keller 86A-1 is a new air operated hoist that is suspended from overhead on its own load line. Operating the control admits air pressure from a shop source through a hose line to wind its wire rope load line onto a reel within the housing and lift a load suspended from a hook beneath the housing. A means to release the lifting action and permit the hoist to move downward assists the operator in reaching for a load quickly without resistance. The hoist weighs 14 pounds. It can be operated at any speed to 40 fpm. through its 9-ft. lifting range.

If you write maker identify as IEN - 14056

Handling - Engine driven tractor mounts interchangeable work attachments

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.



Catalog MS-982

Model WD-45 designates the company's 2-ton wheeled tractor that now is available in combination with a Henry hydraulic backhoe as shown in the illustration. The attachment equipment includes a back filler blade, straight and angle dozers, a front end loader for both digging and loading, a lift fork, crane hook and straight and angle bulldozer blades.

The Power-Crater gasoline engine rates 45 hp. The tractor is equipped with Power-Shift rear wheels that can be adjusted by application of engine power to the width required for desired stability when working in soft ground.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14057

Here's a New "TRAFFIC COP" for short high-speed runs

Added Evidence that— Everyone Can Count on VEEDER ROOT

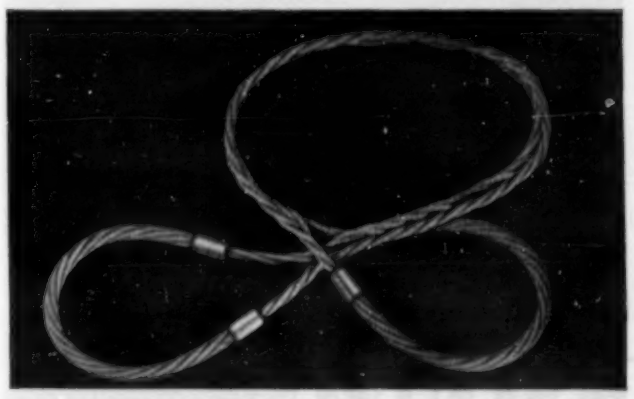
This new small Predetermining Ratchet Counter is set for any run up to 1,000 counts, pieces or other units by the three knurled setting knobs. Then it subtracts to zero, and at that point actuates a contact to light a light, ring a bell or stop the machine. Compact and easy to reset, this counter makes an attractive new selling feature when built into a machine as a standard integral part. And it's just one of scores of standard and special Veeder-Root Counters for every mechanical and electrical application in any field from atomics to automation. What would *you* like to count? Let Veeder-Root figure out how to do it.

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y.
Greenville, S. C. • Montreal 2, Canada
Dundee, Scotland
Offices and Agents in Principal Cities
"THE NAME THAT COUNTS"

If you write maker identify as IEN - 14058

"FLATWEAVE" SLINGS GIVE YOU EXTRA ADVANTAGES



FOR MOST HOISTING JOBS where flexibility is a factor, Roebling "Flatweave" Slings can't be beat. They're quicker and easier to handle—and they are kink resistant. On top of that, "Flatweave's" broad, flat 6-part braided bearing surface protects edges and prolongs sling life.

Send for a copy of the "Roebling Sling Data Book" which gives full facts about slings and sling accessories... shows the way to faster, more economical materials handling. John A. Roebling's Sons Corporation, Trenton 2, N. J.

ROEBLING

Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as IEN - 14059

UNBRAKO

flat head SOCKET CAP SCREWS

for assembly of THIN-SECTION MATERIALS

High shear and tensile strength, maximum head contact, flush surface assembly, non-slip internal wrenching are UNBRAKO features. Sizes from #4 to ¾" are stocked and sold by leading industrial distributors everywhere. Standard sizes listed in UNBRAKO Standards. Write for your copy. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14060

WHAT'S THE BEST WAY TO STRIP METAL PARTS IN LARGE VOLUME?

See page 9

Are you looking for better methods for stripping paint?

Do some finishes resist your present stripping methods? Do rejects form a bottleneck in your production line?

Oakite's FREE booklet on "How to STRIP PAINT" will help you find more efficient procedures. You'll want to read more about: The best way to strip parts too large to be soaked in tanks (*see page 3*); The best way to strip large areas of structural metal (*see page 5*); What strippers are best for oil-base paints? . . . Synthetic enamels, alkali-resistant plastics or resin-based paints... Japans, wrinkle finishes, nitrocellulose lacquers, alkyds, phenolics and ureas (*see page 12*).

FREE For a copy of "How to STRIP PAINT" write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICES

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 14061

Save time! Save costs! Buy your hardboard panels already primed and sealed! New Masonite Primecote Presdwood has a firm, hard and even undercoat sealed on at the factory.

You'll get a finer finish coat, too! No pre-sanding needed. The revolutionary new Primecote process gives Presdwood a smooth, dense film with superior finishing qualities. Neutral gray in color so you can apply lighter tones or darker shades of any color.

No fabricating problems. Primecote Presdwood resists chipping and flaking when sawed, drilled, punched or nailed. Available in 1/8" Standard Presdwood®, 1/4" Panelwood®, 1/8", 3/16" and 1/4" Tempered Presdwood. Panels are 4' wide, lengths up to 12 ft.

If you're going to finish the surface— get Masonite Primecote Presdwood!

Now available only east of Rockies

NATURALLY STRONGER WITH LIGNIN

PRESDWOOD WOOD MADE BETTER

MASONITE® CORPORATION
Dept. IEN-12, Box 777, Chicago 90, Ill.

Please send sample and information about Masonite Primecote Presdwood.
Name.....
Firm.....
Address.....
Town..... Zone.....
County..... State.....

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 14063

Marking - Traffic line machine feeds paint to brush by gravity

Source: H. C. SWEET COMPANY
12345 Telegraph Road, Dept. IEN, Detroit 39, Mich.

Handle controlled

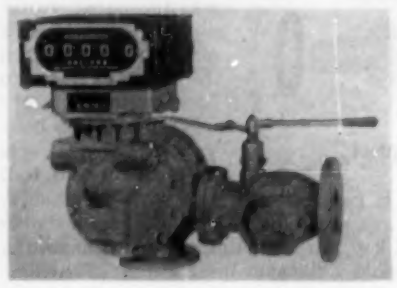
Upright Model designates new assembly of the Florline marking machine, previously described IEN-8844-54. The new design employs a pair of support wheels and an adjustable bracket on the machine housing. The wheels assist the operator in following straight lines at good speed by keeping the machine "on track" with minimum operator effort. The wheels also carry the weight load and are adjustable for handle height.

The machine can be raised a little, by lifting on the handle, to make skip lines or for wheeling to other areas without marking. It also can be lifted to follow the retractable guide wheel to the right or left when laying down a curved line. The new support wheels can be removed for operation in narrow and crowded areas. List price is $117.50.

If you write maker identify as IEN - 14064

Meter - Register set fluid unit with valve to cushion cut-off action

Source: ROCKWELL MFG. COMPANY
624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa.



Closes gently

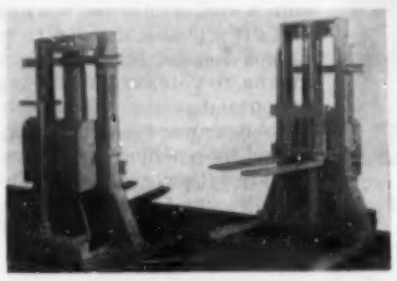
The company announces availability of its Rotocycle meter and its multi-stage register latching device with a new valve designed to eliminate cut-off shock. The valve is available in 2 to 6 in. sizes for use with meters rating 20 to 800 gallons per minute. Closure time ranges from 7½ to 12½ seconds. Closure is accomplished in three stages, each lasting a few seconds.

The register is set for a desired delivery amount and the operating handle is rotated to start the flow. The valve shuts off when the preset amount has been delivered.

If you write maker identify as IEN - 14065

Elevator - Power lift fork design portable, battery powered, rates 2 ton

Source: REVOLVATOR COMPANY
8706 Tonnelle Ave., Dept. IEN, North Bergen, N. J.



Can be converted

Base arms, equipped with wheels, straddle the forks in this new Model TPT portable elevator. The design eliminates need for counter weights. The base arms, telescopic mast, ram, pump unit, roller chains and fork carriage are the same construction as in the company's Go-Getter Walk-A-Long electric trucks for general-purpose handling.

The mast telescopes to 68 inches. The forks lift from 2½ to 85 in. above the floor. The base arms are 42 in. in width by 48 in. in length. The elevator can be operated for right angle tiering in an aisle 20 in. greater in width than the load length. Power is provided by two 6-volt batteries.

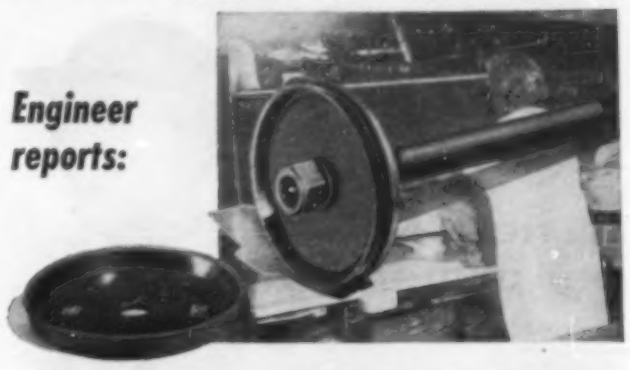
If you write maker identify as IEN - 14066

Metal hose clamps, manufactured by Punch-Lok Company, 321 N. Justine St., Dept. IEN, Chicago, 7, Ill., have found an unusual application. They are being used to bind the heads of hickory mallets employed to knock sand cores out of bell and spigot pipe castings. Before the heads were bound, the mallets were used up at the rate of 12 a day. Addition of the clamps reduced this number to one a day and resulted in an annual saving of $2,246. The application is one of a number illustrated and described in a pocket booklet under the title, "Clampways Ideas".

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14067

Engineer reports:



"Maintenance practically eliminated with J-M Moulded Packing Cups"

A large laundry (name on request) encountered excessive downtime on presses, for maintenance of packings. When they changed to J-M Moulded Packing Cups, packing life was greatly increased, downtime drastically reduced, danger of soiling laundry from servicing packings eliminated.

J-M Moulded Packing Cups are made in many compositions to meet a wide range of pressures, temperatures and service conditions. For details write to Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

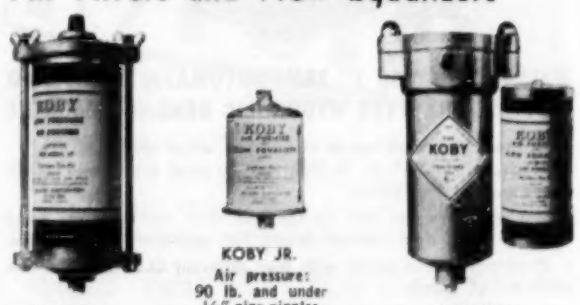
Johns-Manville PACKINGS and GASKETS

If you write maker identify as IEN - 14068

If you need—but are not getting—pure, dry air from your compressed air lines—

absolutely free from all dirt, oil, moisture, odor, bacteria and other foreign matter that can be filtered—

We recommend your trying our Air Filters and Flow Equalizers



MODEL LP
Air pressure: 30 lb. and under ¼" pipe nipples

KOBY JR.
Air pressure: 90 lb. and under ¼" pipe nipples

MODEL S
Air pressure: 125 lb. and under ¼" and ½" nipples

Samples submitted for inspection and test purposes without obligation

THE KOBY CORPORATION
143 High Street • Boston 10, Mass.

If you write maker identify as IEN - 14069

NEW CONSTRUCTION

If you write maker identify as IEN - 14070

Whatever your D.C. requirement....

THERE IS A

THER SELENIUM RECTIFIER

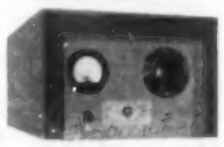
Best suited to your particular application.

75 kw., 230 v. dc. fan cooled unit. For complete range of size request Bulletin 1712.

WE ARE RECTIFIER SPECIALISTS: Standard units range from 3½ to 1000 kw., fan or normal convection cooled. Special units built to any specification.

ADVANTAGES: Economical, quiet, compact. Voltage regulation from ¼ to full load, approx. 3%. Average efficiency greater than comparable motor-generator set. Air-cooled open-type transformers, isolated primary. Removable panels for easy inspection and service. Circuit breaker and thermostatic switch protection on fan cooled models.

ACCESSORIES: Available with voltmeters, ammeters, manual and visible variable voltage controls, top switches, pilot lights, remote starting, audible and visible alarms, etc.



Standard battery charger ratings from 1.12 to 13.6 amps., 1 to 20 cells. Request Bulletin 4504.

SELENIUM RECTIFIER BATTERY CHARGERS Modified constant potential general purpose chargers for lead acid, nickel alkaline, nickel iron and nickel cadmium batteries. Normal convection cooled 1 to 120 lead acid cells. 115 or 220 v., 60 cy., single-phase input.

Continuously variable autotransformer adjusts charging rate. Complete range of cells provide 0 to maximum current. Simple, rugged, drip-proof construction. Models for all standard applications. Special sizes available to specification.

Ther Rectifiers and Battery Chargers are famous for efficiency, long-life and trouble free operation. *Send now for detailed bulletins.*

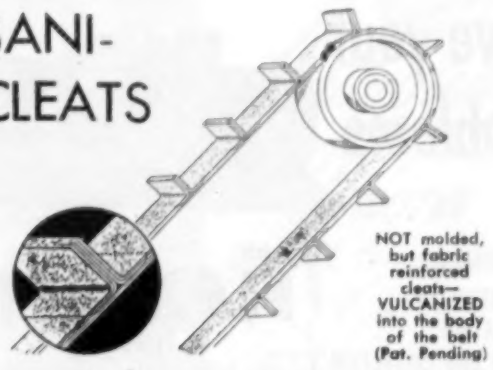
THER ELECTRIC & MACHINE WORKS

ESTABLISHED 1915

15 South Jefferson Street • Chicago 6, Illinois

If you write maker identify as IEN - 14071

SANI-CLEATS



Solves your cleated belt problems with 47 types of belting to handle a variety of products.

Promotes Sanitation as there are no gaps or crevices. No bolts—rivets or metal.

Highly flexible SANI-CLEATS can bend parallel to belt. Can be made stiff or flexible as desired.

Any height, width and spacing with SANI-CLEATS

Write for literature

•

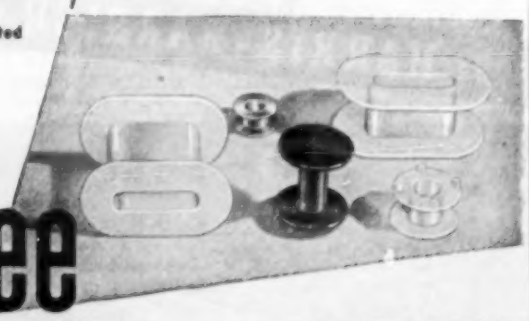
A. J. SPARKS & CO.
863 Grandville Ave., S. W.
Grand Rapids, Michigan

SPARKS BELTING

If you write maker identify as IEN - 14072

for made-to-order precision at mass-production prices

Illustrated Actual Size



See GRC SMALL NYLON COIL BOBBINS

GRC Nylon Bobbins serve you better because they are made to your exact specifications. Yet they cost far less, thanks to Gries' mass-production methods. Bobbins are automatically produced, ready-for-use, in one swift, cost-saving operation. And Gries' unique single-cavity molding technique assures accuracy and uniformity—at prices that afford substantial savings. Send specification for Prompt Quotations on Production runs of 25,000 or more.

MAX. weight .025 oz. Length 1"
NO MINIMUM SIZE!

WRITE FOR FULL INFORMATION AND SAMPLES

GRIES REPRODUCER CORP.

World's Foremost Producer of Small Die Castings

139 Beechwood Ave., New Rochelle, N. Y. Phone NEw Rochelle 3-5600

If you write maker identify as IEN - 14073

Testing - Portable instrument reads material hardness on dial scale

Source: BARBER-COLMAN COMPANY
1200 Rock St., Dept. IEN, Rockford, Ill.

Bulletin F-1689-2BK

Aluminum, brass, copper, plastics are representative materials that can be tested for hardness with this new design of portable Impressor. The instrument is placed upon a test surface and light pressure is applied against it to drive its spring loaded indenter into the material. The hardness reading is indicated on the dial. Application can be made in any position as long as the indenter is perpendicular to the surface. Weight is 12 ounces.

Three models are available, the first for aluminum, brass, copper and some of the harder plastics in an approximate range between 25 and 150 Brinell, the second for softer plastics and very soft metals in a range between 50 and 100 Rockwell R, the third for extremely soft materials such as lead, linoleum, leather. List price ranges from $65 to $100. Overall dimensions are about 5½ by 2½ by 3¼ inches.

If you write maker identify as IEN - 14074

Control - Liquid filled bulb actuates circuit at preset temperature

Source: FENWAL INCORPORATED
218 Pleasant St., Dept. IEN, Ashland, Mass.

About $75

Range is 100 to 700 deg. F. for this new Series-540 temperature control. A liquid filled bulb and capillary connecting tube transmit pressure to a bellows. From there the movement to the indicating pointer is through mechanical links. Control temperature is set at an adjusting knob on the front of the housing.

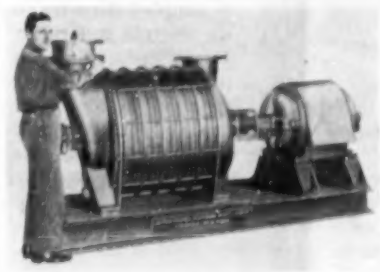
A double-pole double-throw relay, rated at 15 amp. on 110-volt ac., is actuated at the set point. One pole of the relay is employed for external connection. The other pole can be used in a holding circuit. A second relay can be added to control warm up heaters or to increase the rating or number of available poles for load carrying.

Operation differential is adjustable between 0.8 and 4 per cent of scale range. The bellows is self-compensating for changes in ambient temperature between 50 and 150 deg. F. The instrument will operate in temperatures to minus 65 deg. F. The capillary tube can be specified in standard lengths of 6 or 10 feet. The bulb measures ¼ by 5⅜ inches.

If you write maker identify as IEN - 14075

Blower - Multi-stage centrifugal for use in pressure or vacuum service

Source: U. S. HOFFMAN MACHINERY CORP.
105 Fourth Ave., Dept. IEN, New York 3, N. Y.



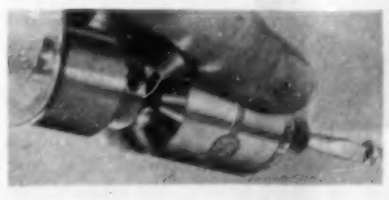
Features adaptability

Delivery rating ranges from 1,500 to 5,000 cfm. for this new No. 385 multi-stage blower. Pressure ranges from 1 to 9 lb. and vacuum from 2 to 12 in. of mercury. The assembly employs a combination of interchangeable impellers that can be factory assembled to meet individual specifications covering air volume requirements in the range between minimum and maximum.

Impellers are available in non-overloading characteristics. Rotor and housing permit free air flow. Each impeller is statically balanced and the rotating element is dynamically balanced for continuous duty.

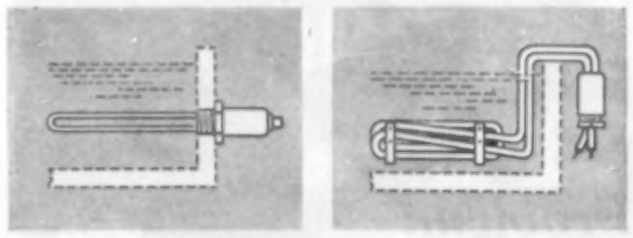
If you write maker identify as IEN - 14076

New attachment applies in a portable drill chuck to drive screws by friction when end pressure is applied on the power tool. Two sizes will drive in soft woods and to ¼ in. in hard woods. List prices are about $5 and $7 from Supreme Products Co., 2222 S. Calumet Ave., Dept. IEN, Chicago 16, Ill. Use is illustrated.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 14077



Heat liquids fast, efficiently with Calrod* immersion heaters

Applicable to nearly any liquid heating job, long-life G-E "screw-in" and "over-the-side" Calrod immersion heaters give you this top performance:

Efficiency—heaters are right in liquid, for maximum heat transfer.

Cleanliness—no open flame to cause smoke and fumes, create fire hazards.

Uniformity—adaptable to thermostatic control for precise temperature regulation.

For more information, see your G-E Apparatus Representative or Distributor. And write now for—

FREE APPLICATION BULLETINS

GEA-5077—"Heating Liquids with Electric Heaters"
GEA-5545—"Calrod Heater Selector Guide"
Sect. 720-112, General Electric Co., Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

If you write maker identify as IEN - 14078

Makes Short Work of the Tough Cleaning Jobs

The powerful Oster "Sewer Master" quickly removes obstructions 100 feet or more from the sewer entrance; yet it weighs less than 100 pounds and is easily wheeled to the job, even up or down stairs.

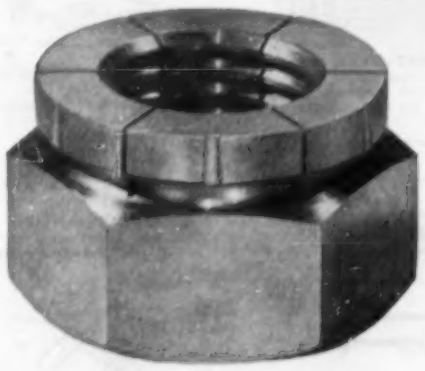
The chuck jaws securely hold and revolve the "snake" in either direction at any distance from the sewer entrance. A large selection of cutting tools are available for most efficient removal of various types of obstructions. For all the facts on the time and money saving "Sewer Master", contact your Oster Distributor, or write us direct.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN - 14079

they're ONE piece, ALL metal...



no parts to work loose or get lost

Because they are one piece—nothing to assemble, come apart, lose or forget—FLEXLOC locknuts save production time. Because they are all metal, they lock and stay tight at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14080

Problem:

How To Seat More People

Answer:

SICO System

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is more *space*—the kind of space possible with portable SICO B-Y Table and Bench Service. SICO B-Y units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durability-constructed of tubular steel, SICO B-Y units feature tough, wear-resistant top, detachable benches and "Floating Fold" action. B-Y tables are completely portable, fold and unfold without pinching fingers, toppling over or marring floors.

Other portable SICO tables—the LB, with "Floating Fold," without benches—and the smaller TIP-TOP with benches—are also efficiently comfortable. See your nearest SICO distributor or write *today* to

Seating inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN - 14081

NEW-DESIGN MOTOR GIVES 30% MORE POWER TO

Speed Increased to 5,000 r.p.m. for Greater Performance on the Job!

Powerful . . . Fast . . . Light . . . Safe! That's the new, improved SKIL Model 852 Heavy Duty Disc Sander. 30% more power for increased r.p.m. to 5,000 assures you *highest maintained working speed* on all jobs.

New front handle location makes more efficient use of tool weight. Shorter length and *lighter* weight lessen operator fatigue throughout day-long use. The new SKIL Model 852 is practical, dependable . . . giving peak performance at maximum safety.

THESE BIG FEATURES MAKE SKIL YOUR BEST BUY IN DISC SANDERS!

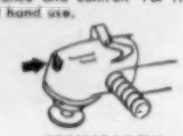
IMPROVED MOTOR! Radically changed to give 30% more power! Maintains high load speed . . . yet runs cooler!

PRECISION-CUT GEARS! Spiral bevel gears cushioned in synthetic rubber. For longer-lasting smoother operation!

TRIGGER SWITCH! For greater comfort in use; with continuous operation button. Dust-proof, 2-pole design for long life.

FRONT HANDLE! Scientifically positioned for better balance and control. For right or left hand use.

REAR HANDLE! Scientifically contoured to fit the hand. More comfortable to use and carry to the job.



SPINDLE LOCK! Conveniently located at front of tool housing. Makes accessory changes far easier.

FREE! Let Your SKIL Distributor Show You in a Convincing Demonstration and FREE Trial . . . that "SKIL is the Answer" to Your Metal Finishing Bottleneck!

SKIL PORTABLE TOOLS
Made only by SKIL Corporation formerly SKILSAW, Inc. 5033 Elston Avenue, Chicago 30, Ill. 3601 Dundas Street West Toronto 9, Ont. Factory Branches in All Leading Cities

MAIL THIS COUPON—NOW!
SKIL Corporation, Dept. IEN-174
5033 Elston Avenue, Chicago 30, Illinois
☐ I would like a SKIL demonstration and free trial
☐ Please send me literature on SKIL Sanders and Grinders
Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 14083

Roof - Corrugated metal deck suited for use with any bonded roofing

Source: REFLECTAL CORPORATION
310 S. Michigan Ave., Dept. IEN, Chicago 4, Ill.

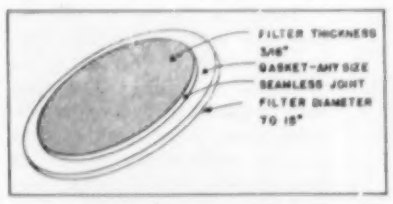
Complete information upon request

Floating panels made of corrugated aluminum, galvanized steel or porcelain coated steel are anchored to an aligned "grid" of sub-purlins in construction of this new Ingersoll roof deck. The sub-purlins are welded to the building purlins and the panels are dropped into place to be secured with slide-on clips. The complete deck installation provides freedom for expansion and contraction of the panels and, at the same time, adequate rigidity and strength for use on 8-ft. spans. It is approved for use with all bonded roofing installations, one of which is shown in the course of application in the illustration.

If you write maker identify as IEN - 14084

Filtering - Porous teflon in disc element for gases, liquids

Source: POROUS PLASTIC FILTER CO.
30 Sea Cliff Ave., Dept. IEN, Glen Cove, N. Y.



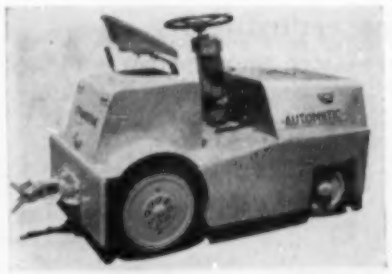
For acids, caustics, solvents

Porous disc, to 12 in. in diameter, and a solid rim, to 15 in. in diameter, are both made of teflon, the chemically inert high temperature resisting plastic produced by du Pont. The porous disc has a mean pore size of 9 microns. It will filter particles having diameters larger than 3 microns from liquids and larger than 1 micron from gases. Flow capacity, to 45 gpm. per sq. ft. of filter area, can be maintained at 5 lb. differential pressure for organic fluids of 1 cp. viscosity. Operating temperature is to 450 degrees Fahrenheit.

If you write maker identify as IEN - 14085

Truck - Engine powered tractor employs generator and traction motor

Source: AUTOMATIC TRANSPORTATION CO.
149 W. 87th St., Dept. IEN, Chicago 20, Ill.



Gear shift is eliminated

Dynamotive Model GLT is a new tractor in which a Continental gasoline engine, governed to develop 38 hp. at 1,800 rpm., is coupled directly to an electric generator. It, in turn, supplies power to an electric traction motor. Control of engine and truck performance is by an accelerator. No gear shift is required. A reversing switch, interlocked with a voltage relay, permits operation in either direction.

The tractor rates 2,000 lb. maximum pull with 600 lb. normal and travel speed to 7 miles per hour. Overall length is about 78 in. without the coupler. Wheel base measures 50 inches. Grade underclearance is 5 inches. The tractor will operate on grades to 38 per cent. It is equipped with hydraulic wheel brakes and with an independent drum type brake for parking and emergencies.

If you write maker identify as IEN - 14086

Metal-Cal name plates, made by C & H Supply Company, Dept. IEN, Inglewood, Calif., are now available with a masked face as well as self-adhesive backing. The thin anodized etched aluminum units can be put on a work surface prior to painting the surface. The mask can be peeled away after the painting job is completed. The new process results in building up paint around the edge of the plate to make it an integral part of the surface. Samples and literature are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14087

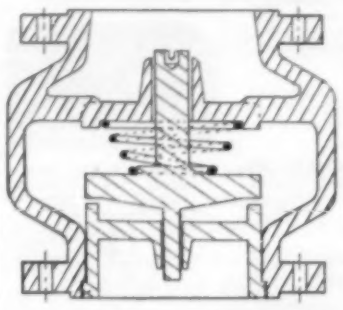
MILLER

SHOCK PROOF — CENTER GUIDED

CHECK VALVE

A.S.A. DRILLING

for main line flow of liquids and gases. Sizes 1 to 24 inches. Ratings 125 to 2500 lb.



- Center guided design
- Stops water hammer
- Dampens line pulsation
- Prevents back flow
- Installs next to fitting
- Vertical or horizontal

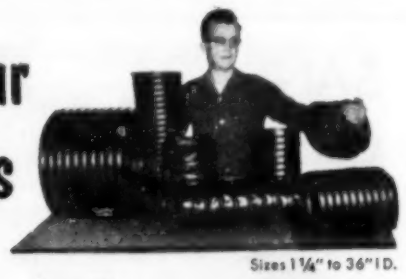
Ask for Bulletin 153

This Bulletin gives complete details of this shockproof valve

MILLER VALVE COMPANY, INC.
Box 1255 • Dept. IEN • Pittsburgh 30, Pa.

If you write maker identify as IEN - 14088

Solve your Problems in



Sizes 1¼" to 36" I.D.

AIR CONDITIONING
FUME CONTROL AND VENTILATION
DUST AND CHIP COLLECTION
MATERIALS HANDLING

with **FLEXAUST®** HOSE

The high-quality, reinforced, spiral-wire hose designed for moving air, dust, fumes, materials.

Here Are Cost-Cutting Advantages:

- **EASY INSTALLATION** — Unskilled labor can cut, couple or cuff Flexaust hose in a jiffy. It's so light, a child can lift it.
- **DURABLE, STRONG** — Flexaust hose is highly resistant to abrasives, aging, corrosion, moisture, chemical deterioration and flexing fatigue. It has a bonded, double ply, double overlap construction.
- **AIRTIGHT**—Ideal for pressure, suction, or gravity operations.
- **HIGHLY FLEXIBLE** — Can maintain large sections on sharp bends; won't kink or flatten.

WRITE TODAY for new bulletins on FLEXAUST hose and companion PORTOVENT® duct: Product Information • Accessories and Installation • Technical Data • Application Data.

THE FLEXAUST COMPANY
Dept. IE-12, 100 Park Avenue, New York 17, New York
Distributors in Principal Cities

FLEXAUST® PORTOVENT® BLOFLEX® *Trade-mark

If you write maker identify as IEN - 14089

Park cars • trucks busses • all types vehicles

The HARRIS-BARRIER Way

Large corporation parks cars compactly, smoothly with Harris-Barriers.

SAVE ON

- Space
- Time
- Money
- Installation
- Maintenance
- Replacement

Park 1 Car to 10,000 Cars Quickly, Efficiently!

HAR-BAR

MAIL COUPON TODAY

Give dimensions and shape of your parking area. Harris-Barrier engineers will prepare *your* engineering kit without obligation!

Name_____
Title_____
Company_____
Address_____
City State
Area Description:
Width____ Length____ Shape____

HARRIS-BARRIER, INC.
Parking System Engineers • 3301 N. Tibbs • Indianapolis 22, Indiana

If you write maker identify as IEN - 14090

STRIKE!

Hannifin's New Square Type Air and Hydraulic Cylinders Are Right "Down Your Alley"!

Every Engineer will want data on these two new lines of cylinders incorporating the BIGGEST IMPROVEMENT IN CYLINDER DESIGN IN THE LAST 50 YEARS!

WRITE FOR

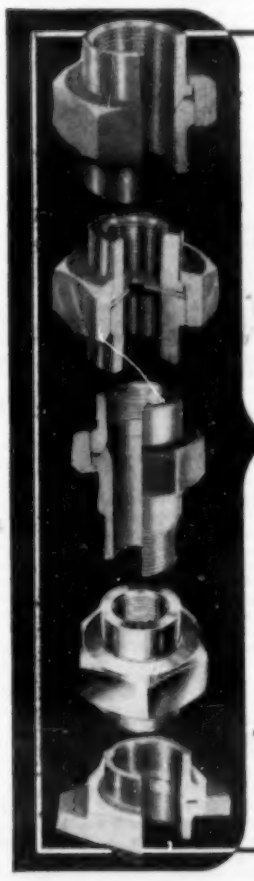
BULLETIN 113
Hydraulic Cylinders 2000 p.s.i.—3000 p.s.i. (non-shock)

BULLETIN 213
Fluid Power Cylinders 200 p.s.i. (air or oil)

HANNIFIN

Hannifin Corporation, 507 S. Wolf Road, Des Plaines, Illinois
Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN - 14091



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL *Unions*

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

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50 Mill St. • CATAWISSA, PA.

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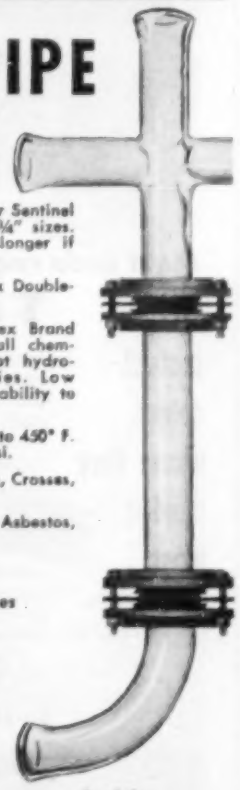
SENTINEL
SMALL DIAMETER **GLASS PIPE and FITTINGS**



STOCK SIZES AND LENGTHS: Small Diameter Sentinel Glass Flanged Pipe in ¼", ⅜", ½", and ¾" sizes. Straight lengths to 72"; can be supplied longer if required.

Sizes larger than ¾", in Bulletin EA3—Pyrex Double-Tough Glass Pipe and Fittings.

Pipe and Fittings are fabricated from Pyrex Brand Glass Tubing. Corrosion-resistant against all chemicals and combinations of chemicals except hydrofluoric acid and hot concentrated alkalies. Low coefficient of expansion, gives remarkable ability to withstand thermal shock.

Normal operating temperatures up to 250° F. to 450° F. if precautions are taken. Pressures to 100 psi.

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GASKETS: Teflon Envelopes, Teflon Snap-On, Asbestos, Gum Rubber, Neoprene, Koroseal.

NEW—PYREX GLASS TRAPS
in all sizes, for drain and waste lines

SENTINEL GLASS CO.
HATBORO, PENNA.

Send for Bulletins SG 11 and name of nearest distributor

I WISH I HAD...

(Continued from page 104)

SURPLUS . . "I wish we had a buyer for our surplus stock of 100,000 steel rivets with a ⅛-in. diameter shank measuring $1\frac{1}{16}$ in. in length and carrying a shoulder under the head $\frac{1}{16}$ in. in length by 0.132 in. in diameter. The stock is in storage at Cambridge, Mass." **IEN W-130**

SURPLUS . . "I wish we had a buyer for approximately 190 sets of No. 201 extension finishing stones for honing operations in a range between 3½ and 6 in. in bore diameter. The stones are new and are in storage in their original boxes in Miami." **IEN W-131**

SURPLUS . . "I wish we had a buyer for a 1954 Model 18-in. diameter Spitfire lapping machine. This machine has a special fine pitch groove table and has not been used. It is in storage in Iron Mountain, Mich." **IEN W-132**

If you write maker identify as IEN - 14093

Control - Temperature instrument indicates, records and regulates

Source: THERMO ELECTRIC CO.
Dept. IEN, Saddle River Twp., Rochelle Park, N. J.

Bulletin 62

Heat input to processing equipment is turned on or cut off when temperature is below or above predetermined control point when the two position design of this new recording controller is employed. Heat input is varied in step with the magnitude of temperature change when the pulse proportional design of control is specified. The former is recommended for batch processes where temperature change can be detected quickly by a thermocouple or resistance bulb. The latter is suited for continuous processes where load changes are relatively small and temperature changes cannot be detected quickly.

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Packaged control equipment for machine and process operations is offered by John C. Whiddet Company, 9 Union Ave., Dept. IEN, Bala-Cynwyd, Pa. The company is prepared to investigate on request and to make recommendations covering specific control requirements. It then can produce the equipment to order.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14095

A PAID NEWS ADVERTISEMENT BY SPECIALTY COATINGS, INC.

IMPROVED WASH-PRIMER TYPE SUBSTANCE Offers Advantages in Pre-Coating Any Metal

Typical Vinsynite Application: providing protection against rust on plain steel tubing TV antenna masts.

Application economies and upgrading of final finish have been effected by many metal products manufacturers through the use of Vinsynite. One customer has cut cost of repainting rejects to less than one-tenth of previous cost. An undercoat which resists corrosion and increases adherence of topcoats of paint, Vinsynite achieves these results by depositing on the metal, in one application, a phosphate coating topped by a thin organic film. This provides both a chemical bond and a perfect surface for paint, thus increasing adhesion and improving appearance of final finish.

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For additional information and technical literature, write **Specialty Coatings, Inc.** division of Thompson and Co., 1000 Allegheny Avenue, Oakmont, Pa.

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now size-marked for easy identification

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Title.....
Company.....
Address.....

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ANSWERS TO YOUR PUMP PROBLEMS

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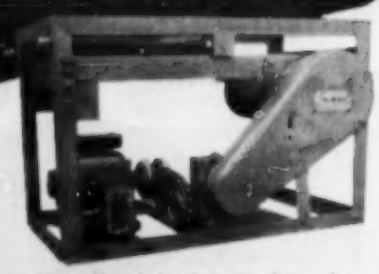
BELT CONVEYOR
and drive it with a
PAKAGE POWER UNIT

THE BEST POWER UNIT ON THE MARKET



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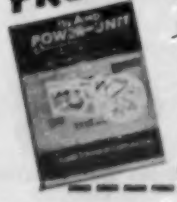

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Sounds good to me. Send brochure on Pakage Power Units and various applications.

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DECEMBER 1954

INDEX TO ADVERTISERS

A

A'G'A Division of Elastic Stop Nut Corp of America 28
Ab rt Gear & Machine Co. 74
Abell-Howe Company 46
Acme Electric Corp. 24
Acme Industrial Company 8
Acme Steel Company 91
Acromark Company 86
Acushnet Process Company 58
Adams, R. P., Co., Inc. 3, 4
Aetna Ball & Roller Bearing Co. 41
Aetna Plywood & Veneer Co. 12
Aircraft-Marine Products, Inc. 16
Air-Hydraulics, Inc. 70
Air-Mite 24
Air Placement Equipment Co. 40
Air Reduction Co., Inc. 74
Ajax Engineering Corp. 32
Ajax Flexible Coupling Co., Inc. 52
Ajusto Equipment Company 48
Akro-Mils, Inc. 4
Alan Wood Steel Company 51
Allen, Alva F. 16
Allen-Bradley Co. 12
Allied Radio 38
Allis-Chalmers Mfg. Co. 3, 11
Aluminum Co. of America 41
Aluminum Ladder Company 60
American Air Filter Co., Inc. 77
American Cystoscope Makers, Inc. 44
American Gilsonite Company 38
American Machine & Foundry Co. 57
American Metal Products Co. 63
American Monorail Company 6
American Platinum Works 65
American Pulley Company 14, 32
American Society for Metals 3
American Welding & Mfg. Co. 50
Ames, B. C., Co. 88
Ames Iron Works 26
Amidon Engineering Company 34
Ampco Metal, Inc. 39
Anaconda Wire & Cable Co. 3, 13
Anderson, V. D., Company 40
Apco Mossberg Co. 39
Aqua Electric Scale Control, Inc. 20
Arcos Corporation 42
Armco Drainage & Metal Products, Inc. 65
Armstrong-Blum Mfg. Co. 45
Armstrong-Bray & Company 79
Aronson Machine Company 89
Arrow Products, Inc. 85
Artos Engineering Co. 37
Askania Regulator Company 95
Associated Research, Inc. 96
Atkomatic Valve Co. 90
Atlantic Abrasive Corporation 50
Atlas Press Co.—Clausing Div. 7
Aurand Mfg. & Equipment Co. 38
Aurora Pump Co. 18
Automatic Switch Company 84
Automotive Service Tools, Inc. Div. of Lansing Die Sinking Co. 67
Avery Adhesive Label Corp. 24

B

Babcock & Wilcox Company Boiler Division 52
Babcock & Wilcox Company Refractories Division 35
Babcock & Wilcox Company Tubular Products Division 103
Bacharach Industrial Instrument Company 78
Bakelite Co., A Div of Union Carbide & Carbon Corp. 63
Ballymore Company 21
Barber-Coleman Company, Wheelco Instruments Div. 41
Bay West Paper Company 26
Bead Chain Manufacturing Co. 91
Behr-Manning Corp. 92
Bellows Company 93
Benchmaster Manufacturing Co. 83
Benjamin Electric Mfg. Co. 31
Binks Mfg. Co. 91
Black Drill Co., Inc. 60
Bokum Tool Company 90
Bond Foundry & Machine Co. 53
Borroughs Mfg. Co. 63
Bostitch 20
Boston Gear Works 20, 81
Bowser, Inc. 77
Brainard Steel Division 102
Breuer Elec. Mfg. Co. 65
Bristol Co. 78, 79
Brookville Mfg. Co. 54
Brown Engineering Company 13
Browning Manufacturing Co. 3
Brown, W. R., Corp. 19
Brulin & Co., Inc. 92
Brush Electronics Company 23
Buck Manufacturing Company 26
Buck Tool Company 78
Budo Company 82
Buell Engineering Company 7
Burgess-Manning Co. 62
Buschman, E. W., Co. 81
Bussmann Mfg. Co. 20

C

Calculagraph Co. 45
Cambridge Instrument Co., Inc. 18
Cameron Machine Co. 92
Camloc Fastener Corporation 42
Cannon Electric Co. 34
Capco 36
Carboloy, Dept. of General Electric Co. 9
Carborundum Company 71
Carpenter Steel Co. 6, 95
Carrier Conveyor Corporation 33
Carver Pump Company 75
Catawissa Valve & Fittings Co. 101
Ceilcote Company, The 32
Cellusuede Products, Inc. 8
Cerro de Pasco Corporation 33
Chain Belt Company 7
Chester Hoist Div., The National Screw & Mfg. Co. 69
Chicago Bridge & Iron Co. 4
Chicago Eye Shield Co. 14
Chicago Float Works 42
Chicago Mfg. & Distributing Co. 95
Chicago Rivet & Machine Co. 12
Chicago Pneumatic Tool Co. 76
Chisholm-Moore Hoist Division 66
Cincinnati Gilbert Machine Tool Co. 59
Clair Mfg. Co., Inc. 91
Clements Mfg. Co. 47
Cleveland Tramrail Division, The Cleveland Crane & Eng. Co. 47, 91
Cleveland Vibrator Co. 80
Clifford Manufacturing Co. 82
Cling-Surface Co. 60
Cochrane Corporation 96
Coffing Hoist Co. 91
Colorado Fuel & Iron Corp. 25, 31, 65, 75
Colson Corporation 49
Columbus McKinnon Chain Corp. 66
Comar Electric Company 50
Commander Mfg. Co. 79
Commercial Reflector & Mfg. Co. 42
Cone-Drive Gears Div., Michigan Tool Company 71
Consolidated Engineering Corp. 40
Continental Steel Corp. 42
Cordley and Hayes 62
Cover, H. S. 27
Conveyor Specialty Co., Inc. 64
Crane Co. 4
Crane Packing Company, Lapmaster Div. 51
Crane Packing Co. 59
Cro-Plate Company, Inc. 65
Cullen-Friestedt Company 30
Cunningham, M. E., Co. 5
Curtis Development & Mfg. Co. 33
Curtis Pneumatic Machinery Div. of Curtis Mfg. Co. 9
Cutler-Hammer, Inc. 29

D

Danly Machine Specialties, Inc. 68
Darnell Corp., Ltd. 56
Dart Union Company 32
Davenport, A. C., & Son, Inc. 76
Day Company, The 78
De Bothezat Fans Div. American Machine & Metals, Inc. 104
Defiance Machine & Tool Co. 7
Delpark Corp. 81
Deluxe Metal Furniture Co. 72
Derby Sealers, Inc. 22
Despatch Oven Co. 64
Detex Watchclock Corporation 30
Detroit Tap & Tool Company 28
DeVilbiss Company 61
De Walt, Inc. 57
DeZurik Shower Company 58
Dico Company 17
Dillon, W. C., & Co., Inc. 94
Dodge Mfg. Corp. 41
Dolge, C. B., Co. 34
Dollin Corp. 52
Doyle Vacuum Cleaner Corp. 36
Dravo Corporation 41
Drying & Concentrating Co. 86
Duff-Norton Mfg. Co. 2
Du-Lite Chemical Corporation 58
du Mont Corp. 82
Dumore Company 31
Du Pont, E. I., De Nemours & Co. 15
Durable Manufacturing Co. 50
Dustex Corporation 46

E

Eastman Kodak Co. 4, 43, 83
Easton Car & Construction Co. 87
Economy Engineering Co. 25
Edmund Scientific Corporation 104
Elastic Stop Nut Corp. of America 75
Elco Tool and Screw Corporation 37
Electran Manufacturing Company 50
Electric Hotpack Company, Inc. 11
Electroline Co. 63
Electro-Snap Switch and Mfg. Co. 28
Elgin National Watch Co.—Abrasives Division 69
Elliott Company 52, 79
Elox Corporation of Michigan 68
Emerson Electric Mfg. Co. 24
Engelberg Huller Company, Inc. 80
Enterprise Machine Parts Corp. 39
Equipto Division of Aurora Equipment Company 71
Erico Products, Inc. 34
Erie Tool Works 87
Eriez Manufacturing Company 54
Eutectic Welding Alloys Corp. 66
Ex-Cell-O Corp. 67
Exide Industrial Division, Electric Storage Battery Co. 48

F

Faber-Castell, A. W., Pencil Co., Inc. 3
Fairbanks Company 98
Fairfield Manufacturing Co. 36
Farrelloy Company 104
Fawick Airflex Division Federal Fawick Corp. 35
Felters Company 12
Fenwal, Inc. 84
Finnell System, Inc. 22
Fisher Governor Co. 103
Flash-Stone Company 86
Flexaust Company, The 100
Flexrock Company 102
Flightex Fabrics, Inc. 67
Force, Wm. A., & Co., Inc. 68
Fort Worth Steel & Machinery Co. 85
Foster, L. B., Co. 12
Foxboro Co. 104
Frasse, Peter A., & Co., Inc. 19
Fulflo Specialties Co., Inc. 32
Fuller, H. B., Company 38
Fulton Sylphon Div. Robertshaw-Fulton Controls Co. 61

G

G-M Laboratories, Inc. 70
Garlock Packing Co. 15
Gast Mfg. Corp. 20
Gear Grinding Machine Co. 74
General Box Co. 30
General Electric Co. 99
General Plate Div. of Metals & Controls Corp. 53
General Motors Corp. 2
General Radio Co. 71
General Tire & Rubber Co. 29
Gerotor May Corp. 97
Gerrard Steel Strapping Div. 57
Gits Bros. Mfg. Co. 60
Globe Industries, Inc. 62
Goodrich, B. F., Co. 76
Goodyear Tire & Rubber Co. 27
Gottscho, Adolph, Inc. 44
Graham Transmissions, Inc. 27
Graybar Electric Co., Inc. 8, 37
Gray Company, Inc. 76
Gries Reproducer Corp. 99
Grinding & Polishing Machinery Corp. 16
Guardian Electric 84

H

Haloid Company 55
Hamilton Tool Co. 29, 31, 33
Hammond Machinery Builders, Inc. 95
Handy & Harman 2
Hankison Corp. 45
Hannifin Corp. 85, 101
Hansen, A. L., Mfg. Co. 55
Hansen Mfg. Co., The 44
Hardinge Brothers, Inc. 51
Hardinge Co., Inc. 73
Harper, H. M., Co. 53
Harrington & King Perforating Co. 62
Harris-Barrier, Inc. 100
Hassall, John, Inc. 64
Hazard Insulated Wire Works, Div. The Okonite Company 93
Heinemann Electric Company 80
Hobbs Mfg. Co. 72
Homestead Valve Mfg. Co. 28
Hood Rubber Company 57
Horn, A. C., Company, Inc. 38
Houghton, E. F., & Co. 96
Huot Mfg. Co. 40
Huppert, K. H., Company 86

I

Ideal Industries, Inc. 21
Illinois Engineering Co. Div. of American Air Filter Co. 35
Illinois Testing Laboratories, Inc. 68, 90
Index Machine Company 50
Industrial Brownhoist Corp. 73
Industrial Crane & Hoist Corp. 74
Industrial Filtration Company 81
Industrial Products Company 3
Ingersoll-Rand Company 83
Injection Molders Supply Co. 30
Interstate Rubber Products Corp. 54
Ironbound Box & Lumber Co. 48
Irvington Varnish & Insulator Co. 29
Irwin Auger Bit Company 47
Island Equipment Corporation 102

J

Jaco Devices, Inc. 60
Jaeger Machine Company, The 40
Jeffrey Manufacturing Co. 18
Jenkins Brothers 70
Johns-Manville 87, 98
Johnson Bronze Company 22
Johnson Corporation 8
Johnson Manufacturing Corp. 28
Jones, Howard B., Div., Cinch Mfg. Corp. 74
Jones Motrola Corporation 59

K

Kasson Die and Motor Corp. 76
Keller Tool Company 39, 73
Kennametal, Inc. 76
Kester Solder Company 43
Kidde, Walter, & Company, Inc. 2
Klipfel Valves, Inc. 36
Koby Corporation, The 98
Koehring Company 31
Krengel Manufacturing Co., Inc. 32
Kritzer Radiant Coils, Inc. 89

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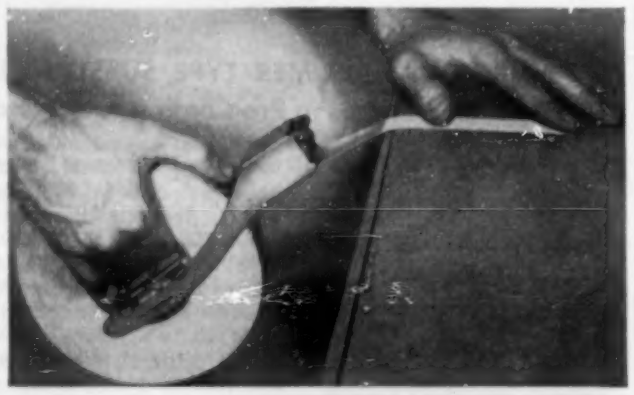
A return post card is being mailed to each of the readers of IEN during the next few months. It is intended for your use to make sure you want to remain on our mailing list. Please watch for it.

OK or correct your name and address as they appear on the card. Please also check the questions that are asked there. They are simple, self-explanatory, and essential to our circulation audit.

If you write maker identify as IEN - 14102



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protect cables where they need it most

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For lower installation costs and faster inspection approval, make it a point to standardize on T & B Insuliners. For complete details send for Data Sheet H2. T-314

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INDEX TO ADVERTISERS

DECEMBER 1954

L

L & L Manufacturing Co. 57
Laminated Shim Company, Inc. 40
Lamson Mobilift Corporation 78
Lanham Skid Company, Div. of Thomas Truck & Caster Co. 9
Lawlor, S. C., Company 68
Lepel High Frequency Laboratories, Inc. 62
Levin, Louis, & Son, Inc. 11
Lewis-Shepard 89
Linde Air Products Co., A Div. of Union Carbide & Carbon Corp. 6, 19, 35
Linemaster Switch Corp. 90
Link-Belt Company 17
Littell, F. J., Machine Company 22
Logan Company 7
Logan Engineering Company 30
Logansport Machine Co., Inc. 83
Lovejoy Flexible Coupling Co. 5
Lubriplate Division, Fiske Bros. Refining Co. 3
Lufkin Rule Company 29
Lusteroid Container Co., Inc. 54

Mc

McCaskey Register Company 18
McDonald, B. F., Company 17

M

Machine Products Corp. 10
Madison-Kipp Corporation 25
Magnesium Co. of America 72
Mahon, R. C., Company 14
Mamoux, A., & Son 10
Manheim Mfg. & Belting Co. 50
Manzel Division of Frontier Industries, Inc. 25
Marquette Mfg. Co., Inc. 92
Marsh Instrument Company 32
Martindale Electric Company 10
Masonite Corporation 98
Mason-Neilan Regulator Co. 57
Master Specialty Company, Inc. 48
Mathewson Machine Works 14
Mead Specialties Company 26, 90
Melrath Supply & Gasket Co., Inc. 94
Mercury Manufacturing Co. 23
Merrill Brothers 63
Met-L-Wood Corporation 85
Metzgar Conveyor Company 6
Miller Valve Company, Inc. 100
Milton Roy Company 31
Milwaukee Electric Tool Corp. 61
Mine Safety Appliances Company 59, 97
Minnesota Mining & Manufacturing Co. 67
Missouri Research Laboratories 88
Mitts & Merrill 57
Molded Fiberglass Tray Company 72
Morris Machine Works 55
Morse Chain Company 54
Morse Manufacturing Co., Inc. 61
Motoresearch Company 6
Mueller Brass Company 73

N

National Acme Company 51
National Cylinder Gas Co. 78
National Electric Products Corp. 77
National Lock Washer Co. 49
Nelson, Herman, Division of American Air Filter Co., Inc. 47
Neumann & Welchman, Inc. 48
Newage International, Inc. 44
Newark Wire Cloth Company 59
Newcomb-Detroit 55
Newcomer Products, Inc. 48
New Departure Division 2
New Hermes Engraving Machine Corporation 69
Newman Manufacturing & Sales Company 22
New York Blower Company 86
Nicholson, W. H., & Company 11
Nolan Company 19
Norgren, C. A., Company 39
Norma-Hoffman Bearings Corporation—Walker Division 85
Norton Company 67
Nox-Rust Chemical Corporation 43
Nugent, Wm. W., & Co., Inc. 89
Nutting Truck & Caster Company 16
Nutt-Shel Company 46

O

Oakite Products, Inc. 98
Ohio Knife Company 17
Ohmite Manufacturing Co. 23
Oilgear Company 95
Okonite Company 15, 36
O'Neil-Irwin Manufacturing Co. 12
Orchard Industries, Inc. 70
Ortman-Miller Machine Co. 94
Oster Manufacturing Company 99
Owatonna Tool Company 35

P

Pacific Industrial Mfg. Co. 66
Package Machinery Company 11
Packless Metal Hose, Inc. 80
Paddock Tool Company 13
Palley Supply Company 4
Parker-Kalon Div. General American Transportation Corp. 9
Parks-Cramer Company 87
Partlow Corporation 21
Patent Scaffolding Company, Inc. 14
Pedrick Tool & Machine Co. 95
Pearless Pump Division, Food Machinery & Chemical Corp. 17
Pemco Wheel Company 47
Pennsylvania Flexible Metallic Tubing Company, Inc. 74
Penn Metal Company, Inc. 51
Permaflex Products Company 104
Philadelphia Gear Works, Inc. 34
Philadelphia Quartz Company 96
Phillips Corporation 53
Phillips Manufacturing Co. 82
Phillips Process Co., Inc. 17
Pike, E. W., & Company, Inc. 24
Platecoil Division, Tranter Manufacturing, Inc. 21
Pneu-Trol Devices, Inc. 93
Powers Regulator Company 89
Porter-Cable Machine Company 78
Prab Conveyors, Inc. 89
Prater Pulverizer Company 94
Precision Piston Rings, Inc. 64
Pressed Steel Tank Company 23
Pritchard, J. F., Company of California 39
Protective Closures Co., Inc. 69
Proto Tools 10
Pulverizing Machinery Div., Metals Disintegrating Company, Inc. 72

R

R & IE Equipment Division, I-T-E Circuit Breaker Co. 35
Radiant Lamp Corporation 42
Rafter Machine Company, Inc. 10
Ramset Fasteners, Inc. 93
Rapids-Standard Company, Inc. 71
Rauland-Borg Corporation 43
Raymond Corporation 64, 92
Raytheon Manufacturing Co. 54, 74
Ready-Power Company 61
Reeves Pulley Company 20
Relay Sales 101
Renton, R. W., and Company 58
Republic Manufacturing Co. 48
Resistoflex Corporation 53
Resolite Corporation 82
Revolvator Company 43
Rhodes, M. H., Inc. 67
Ridge Tool Company 56
Rigidized Metals Corp. 7
Rivett Lathe & Grinder, Inc. 27
Rock Island Millwork Company 8
Robinson, Edward E., Inc. 53
Rockford Clutch Division 45
Rock-Tred Corporation 101
Rockwell Manufacturing Co. 56
Rockwood Sprinkler Co. 55, 85
Roebling's, John A., Sons Corp. 41, 97
Rotary Concrete Drill Company 44
Roura Iron Works, Inc. 40
Ruberoid Company 84
Ruemelin Manufacturing Co. 9
Ruger Cranes 24

S

SKF Industries, Inc. 96
Sales Service Machine Tool Co. 88
Sarco Company, Inc. 104
Sarkes Tarzian, Inc. Rectifier Division 61
Scherr, George, Company, Inc. 8, 28, 38
Schrader's, A., Son 89, 93
Schramm, Inc. 34
Scovill Manufacturing Co. 89, 93
Seamless Rubber Company 65
Seating, Inc. 100
Segal, Edward 46
Sentinel Glass Company 101
Service Machine Company, Inc. 94
Service Recorder Company 46
Severance Tool Industries, Inc. 58
Sexauer, J. A., Manufacturing Company, Inc. 70
Shakeproof, Division of Illinois Tool Works 33
Sheldon Machine Company, Inc. 90
Shenango-Penn Mold Company 46
Signode Steel Strapping Co. 18
Silent Glow Oil Burner Corporation, The 56
Simmons Fastener Corporation 52
Simonds Abrasive Company 36
Simpson Electric Company 49
Skil Corporation 100
Sola Electric Company 16
South Bend Lathe 37
South Chester Corporation 73
Southern Screw Company 5, 22
Sparks, A. J., & Company 99
Specialty Coatings, Inc. Division of Thompson & Co. 101
Speed Selector, Inc. 55
Spence Engineering Co., Inc. 81
Spencer Turbine Company 49
Sprague Electric Company 28
Spray Engineering Company 23
Sprout-Waldron & Company 63
Square D Company 15, 44
Stackbin Corporation 19
Stackpole Carbon Company 66
Stalwart Rubber Company 27
Standard Pressed Steel Company 97, 99, 101
Standard Steel Spring Division, Rockwell Spring & Axle Co. 34
Star Stainless Screw Company 92
Sta-Warm Electric Company 21
Stearns Magnetic, Inc. 104
Sterling Electric Motors 28
Stewart Warner, Alemite 43, 60
Stonhard Company 103
Stonehouse Signs, Inc. 13
Storm-Vulcan, Inc. 90
Sturtevant Mill Company 72
Sturtevant, P. A., Company 25
Sugar Beet Products Company 80
Sun Chemical Corporation 38
Superior Pneumatic & Mfg., Inc. 42
Superior Tube Company 75
Synthane Corporation 45

T

Taylor Instrument Companies 77
Taylor-Stiles & Company 12
Tempil Corporation 58
Templeton, Kenly & Company 7
Ther Electric & Machine Works 99
Thermo Electric Company, Inc. 23
Thomas Associates 21
Thomas & Betts Company, Inc. 102
Thomson Industries, Inc. 79
Thriftmaster Products Corp. 86
Titan Tool Company 8
Toledo Scale Company 30
Tomkins-Johnson Company 82
Torit Manufacturing Company 94
Torrington Company, The 19
Townsend Company 69
Trent, Inc. 15
Trombetta Solenoid Corporation 5
Tropical Paint Company 10
Truscon Steel Division Republic Steel 6
Tuthill Pump Company 102
Twin Disc Clutch Company 9

U

Udylite Corporation 25
Ungar Electric Tools, Inc. 64
Union Carbide & Carbon Corp., Bakelite Company 63
Union Carbide & Carbon Corp., Linde Air Products Co. 6, 19, 35
Union Special Machine Company 70
United Electric Controls Co. 66
U. S. Electrical Motors, Inc. 84
United States Gauge, Div. American Machine and Metals, Inc. 30
United States Rubber Co. 43, 83
United States Steel Corp. 51
United States Steel Supply Div. 72
United States Steel 51, 57, 72
United States Stoneware Co. 66
United Steel Fabricators, Inc. 93
Universal Engineering Company 69
Universal Manufacturing Corp. 88
Universal Winding Company 37, 68
Uptegraff, R. E., Mfg. Co. 81

V

Valvair Corporation 103
Vapor Heating Corp. 66, 75
Veeder-Root, Inc. 97
Velocity Power Tool Company 59
Verson Allsteel Press Company 5
Viking Pump Company 18

W

Waco Manufacturing Co. 52
Wagner Electric Corporation 15
Wallace Supplies Manufacturing Company 97
Ward Leonard Electric Company 11
Washington Steel Corporation 77
Watson-Stillman Fittings Div. H. K. Porter Co., Inc. 59
Waterman Engineering Co. 6
Waterman Products Company, Inc. 54
Webb, Jervis B., Company 14
Webster Instrument, Inc. 56
Western Chemical Company 44
Western Manufacturing Company 13
Western Precipitation Corp. 26
Westinghouse Air Brake Co. 71
Weston Electrical Instrument Corporation 47
Wheelco Instruments Div., Barber-Colman Company 41
Wheel Trueing Tool Company 33
White, S. S., Dental Mfg. Co. 10
Whiting Corporation 87
Whitney Metal Tool Company 24
Wickwire Spencer Steel Division of C F & I 25, 31, 65, 75
Wiegand, Edwin L., Company 5, 11
Wiggins, E. B., Oil Tool Co., Inc. 16
Williams Gauge Company, Inc. 58
Willson Products, Inc. 82
Wing, L. J., Manufacturing Co. 80
Wire Belt Company of America 46
Wittek Manufacturing Company 62
Wood Conversion Company 37
Wood, John, Company 49
Worthington Corporation 18

X Y Z

Yale & Towne Mfg. Co. 13
Yarnall-Waring Company 26
Zenith Electric Company 16

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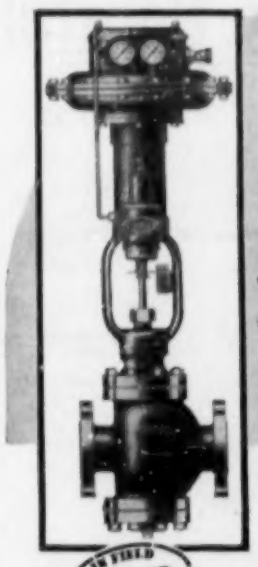

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

CONTROL . . "I wish we had a source for detectors which can be built into progressive dies to stop a press in the event that malfunction occurs." **IEN W-124**

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(Please turn to page 101)

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